

Twenty-First Actuarial Valuation

**of the Assets and Liabilities
Under the Railroad Retirement Acts
as of December 31, 1998**



**U.S. Railroad Retirement Board
Bureau of the Actuary
Chicago, Illinois**



UNITED STATES OF AMERICA
RAILROAD RETIREMENT BOARD
844 NORTH RUSH STREET
CHICAGO, ILLINOIS 60611-2092

BOARD MEMBERS:

CHERRYL T. THOMAS, CHAIR
V.M. SPEAKMAN, JR., LABOR MEMBER
JEROME F. KEVER, MANAGEMENT MEMBER

STATEMENT OF THE RAILROAD RETIREMENT BOARD

Section 15(g) of the Railroad Retirement Act of 1974 requires that the Railroad Retirement Board, at intervals not longer than three years, estimate the liabilities created by the Act and include the estimate in its annual report. Section 22 of the Railroad Retirement Act of 1974 requires that the Board submit to the President and the Congress, by July 1 of each year, a report containing a five year projection of the revenues to and payments from the Railroad Retirement Account. Section 502 of the Railroad Retirement Solvency Act of 1983, Public Law 98-76, requires that the Board submit to the Congress, by July 1 of each year, a report on the actuarial status of the railroad retirement system. The 21st valuation was prepared by the Board's Chief Actuary and meets these requirements. The Actuarial Advisory Committee reviewed the valuation as to assumptions and methods as required by Section 15(f) of the Railroad Retirement Act.

The Chief Actuary's report describes the results of three valuations, each valuation differing from the others as to the employment assumption on which it is based. Cash flow problems occur only under the most pessimistic employment assumption. Even under that assumption, the cash flow problems do not occur until the year 2035.

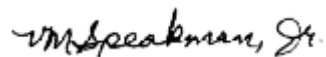
Section 502 of the Solvency Act requires recommendations with respect to tax rates and whether any part of the taxes on employers should be diverted to the Railroad Unemployment Insurance Account to aid in the repayment of any debt to the Railroad Retirement Account. The Chief Actuary's report does not recommend a change in the tax rate, nor does it recommend a diversion of taxes from the Railroad Retirement Account to the Railroad Unemployment Insurance Account.

The Board Members believe that the 21st valuation presents a fair picture of the financial condition of the railroad retirement system, and we support the conclusions reached in the report.

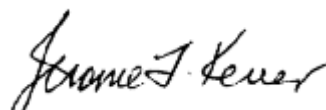
The Railroad Retirement Board wishes to thank the members of the Actuarial Advisory Committee for their assistance in this important project.

A handwritten signature in cursive script, reading "Cheryl T. Thomas".

Cherryl T. Thomas

A handwritten signature in cursive script, reading "V. M. Speakman, Jr.". The signature is somewhat stylized and slanted.

V. M. Speakman, Jr.

A handwritten signature in cursive script, reading "Jerome F. Kever". The signature is written in a clear, flowing cursive.

Jerome F. Kever

STATEMENT OF THE ACTUARIAL ADVISORY COMMITTEE
May 25, 2000

This statement sets forth the Committee's review of the twenty-first actuarial valuation of the railroad retirement system. This valuation, performed as of December 31, 1998, was completed in the spring of 2000 by Mr. Frank J. Buzzi, Chief Actuary of the Railroad Retirement Board, and his staff. In both the planning and carrying out of the valuation, the Committee has counseled with Mr. Buzzi as to the structure, actuarial methods, actuarial assumptions, and procedures of the valuation and as to the scope and content of his report. In all, the Committee has met with the Chief Actuary on June 15, 1999, February 7, 2000, and May 25, 2000, for the purpose of reviewing and discussing the significant elements of the twenty-first valuation.

The Committee believes that the actuarial assumptions are reasonable and that the valuation results present a fair picture of the financial condition of the railroad retirement system.

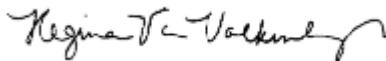
Section 502 of the Railroad Retirement Solvency Act requires the Board to report to Congress on the actuarial status of the railroad retirement system each year. The report must include recommendations for any desirable financing changes. As in the 1988 through 1999 Section 502 Reports, the Chief Actuary recommends no change in payroll tax rates under the railroad retirement system.

The Chief Actuary's report indicates that the actuarial condition ranges from a surplus of 5.75% of payroll to a surplus of 0.18% of payroll, depending on assumed future employment levels. This compares to a range of 3.70% of payroll surplus to 2.69% of payroll deficit in the twentieth valuation.

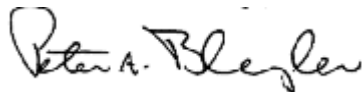
The improvement in actuarial condition since the twentieth valuation results primarily from favorable economic and employment experience, which is reflected in the assumptions used for the twenty-first valuation.

The Committee acknowledges the valuable help of the Board and of the Chief Actuary and his staff in the Committee's review of this valuation.

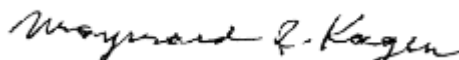
Respectfully submitted,



Regina Van Valkenburgh, M.A.A.A., Chair



Peter A. Bleyler, M.A.A.A.



Maynard I. Kagen, M.A.A.A.

REPORT OF THE ACTUARY

I. INTRODUCTION

Section 15 of the Railroad Retirement Act of 1974 requires that the Railroad Retirement Board, at intervals of not more than three years, prepare actuarial valuations of the railroad retirement system.

Section 22 of the Railroad Retirement Act of 1974 requires that the Railroad Retirement Board prepare an annual report containing a five year projection of revenues to and payments from the Railroad Retirement Account and to submit the report to the President and the Congress by July 1. If the five year projection indicates that funds in the Railroad Retirement Account will be insufficient to pay full benefits, (i) representatives of railroad employees, railroad carriers and the President must submit proposals to the Congress to preserve the financial solvency of the Railroad Retirement Account, and (ii) the Railroad Retirement Board must issue regulations to reduce annuity levels during any fiscal year in which there would be insufficient funds to make full payments.

Section 502 of the Railroad Retirement Solvency Act of 1983 requires the Railroad Retirement Board to prepare an annual report on the actuarial status of the railroad retirement system and to submit the report to the Congress by July 1. The report must contain recommendations for any financing changes which might be advisable, including (1) changes in the tax rates, and (2) whether any part of the taxes on employers should be diverted to the Railroad Unemployment Insurance Account to aid in the repayment of any debt to the Railroad Retirement Account.

This report, the 21st actuarial valuation, is intended to meet these three requirements for 2000.

II. SUMMARY OF RECENT DEVELOPMENTS AND RESULTS

Recent actuarial reports have discussed in detail the importance of the level of railroad employment to the railroad retirement system's financial stability. The payroll tax on railroad employment has been the major source of income to the system since its establishment in the 1930's. It is clear that the fewer railroad workers there are, the less money the retirement account collects in payroll taxes, and the more likely the system is to require additional funds. Declines in railroad employment over a long period, coupled with inflation and subsequent benefit increases, required legislation to strengthen the system's financial condition in 1974, 1981, 1983, and 1987.

The 20th valuation (1997 actuarial report) projected that, even under the most pessimistic employment assumption, cash flow problems did not arise for over 20 years. Since the time of the 20th valuation report, employment levels have exceeded our optimistic assumption. As a result, the cash flows projected in both the 1998 and 1999 actuarial reports have been more favorable than those in the 20th valuation. Because of this, neither of those reports recommended a change in tax rates.

The 21st valuation has been prepared under three assumptions as to the future behavior of railroad employment. These employment assumptions are similar to the employment assumptions used in the 20th valuation, differing mainly because of lower rates of decline assumed for freight employment. Employment assumptions I and II are based on the stability of employment in passenger service (Amtrak and commuter service) as distinguished from freight service. Employment assumption III follows the structure of assumptions I and II, except that it has declines in passenger employment and steeper declines in freight employment than employment assumptions I and II. Employment assumptions I, II and III are intended to provide an optimistic, moderate and pessimistic assumption, respectively. The specific results of the projections made in this report of the railroad retirement system's financial condition are as follows:

1. Under employment assumption I, an actuarial surplus of 5.75 percent of tier 2 payroll exists as of December 31, 1998. There are no cash flow problems during the 75-year projection period.
2. Under employment assumption II, an actuarial surplus of 3.34 percent of tier 2 payroll exists as of December 31, 1998. There are no cash flow problems during the 75-year projection period.
3. Under employment assumption III, an actuarial surplus of 0.18 percent of tier 2 payroll exists as of December 31, 1998. Cash flow problems arise in 2035 and remain until 2068. There are no cash flow problems from 2068 to the end of the projection period.

The surplus or deficiency figures given above represent the tax rate changes, effective January 1, 1999, which would produce a balance of zero in the combined Railroad Retirement and Social Security Equivalent Benefit Accounts at the end of the 75-year projection period.

The actuarial surplus or deficiency figures provide only for benefits paid during the 75-year projection period, and not for benefits earned during the period and paid after the end of period. The tax increase needed to fund all benefits paid during the 75-year period and to provide a fund balance on December 31, 2073, equal to the accrued liability (calculated using the entry age normal method) is shown below.

<u>Employment assumption</u>	<u>Tier 2 tax increase on January 1, 2001</u>
I	none
II	none
III	1.02%

The conclusion is that, barring a sudden, unanticipated, large drop in railroad employment, the railroad retirement system will experience no cash flow problems during the next 35 years. The long-term stability of the system, however, is not assured. Under the current financing structure, actual levels of railroad employment over the coming years will determine whether additional corrective action is necessary.

As mentioned earlier, this report is intended to meet the requirements of Section 502 of the 1983 Solvency Act. Section 502 requires recommendations with regard to the (1) tax rates and (2) whether any part of the taxes on employers should be diverted to the Railroad Unemployment Insurance Account to aid in the repayment of its debt to the Railroad Retirement Account.

1. This report recommends no change in the rate of tax imposed on employers and employees.

Because of future financing problems occurring under employment assumption III, as discussed above, a decrease in tax rates is not recommended at the current time. On the other hand, the absence of projected cash flow problems for at least 35 years under each employment assumption indicates that an immediate increase in tax rates is not required.

2. No diversion of taxes from the Railroad Retirement Account to the Railroad Unemployment Insurance Account is recommended. There are no loans currently outstanding from the Railroad Retirement Account to the Railroad Unemployment Insurance Account.

Section V of this report presents details of the valuations under the three employment assumptions.

III. REGULAR AND SUPPLEMENTAL BENEFITS AND FINANCING

The Appendix contains a detailed description of the provisions of the current law. Sections III and IV provide a more general summary of the law.

Railroad retirement benefits are paid from four accounts: the Railroad Retirement (RR) Account, the Social Security Equivalent Benefit (SSEB) Account, the Railroad Retirement Supplemental Account, and the Dual Benefits Payments Account. Because of their intertwined nature, the RR Account and the SSEB Account are discussed together in part A of this section. The Railroad Retirement Supplemental Account is discussed in part B. Dual benefits and the Dual Benefits Payments Account are discussed in a separate section, Section IV.

A. The Railroad Retirement and Social Security Equivalent Benefit Accounts

Benefits paid from the RR and SSEB Accounts consist mainly of monthly payments to retired or disabled employees, their spouses, and survivors. The various types of benefits and their eligibility requirements are described in the Appendix. The accounts also pay out relatively small amounts in lump sums to employees and their survivors in certain cases. The monthly benefits consist of two components, known as tier 1 and tier 2.

For all categories of recipients, the gross tier 1 benefit is generally equivalent to the benefit that the social security system would pay if all the employee's earnings (railroad and non-railroad) had been covered under the Social Security Act. Any benefit actually received from social security is subtracted to determine the net tier 1 benefit payable. Section IV explains the logic behind this determination. The cost-of-living increase paid to social security beneficiaries automatically carries over to the tier 1 component of railroad retirement annuities.

There are some differences between social security benefits and tier 1 benefits. The most significant are as follows:

1. An employee may not retire before age 62 under the social security system. Under the railroad retirement system, an employee may retire at age 60 with 30 years of service. If the employee retires before age 62, the tier 1 benefit will be reduced (tier 2 benefit is not reduced) by the same percentage that social security would apply to an employee retiring at age 62. The reduced tier 1 benefit will be frozen until the employee reaches age 62, at which time it will be recomputed to reflect increases in national wage levels. Thereafter, the benefit will rise with increases in the cost of living.

If the 30-year employee retires at age 62 or later, the tier 1 benefit will not be reduced. The spouse of a 30-year employee may also receive a benefit at age 60. The spouse's tier 1 benefit is reduced if the employee's tier 1 benefit is reduced, even if the spouse does not retire until age 62.

2. Railroad retirement pays an occupational disability benefit under tier 1 and tier 2. Social security requires total and permanent disability. The same five-month waiting period applies under both systems.
3. Widows who retire at age 60 or 61 under railroad retirement are deemed age 62 in the computation of the tier 1 benefit, resulting in a smaller age reduction than under social security.
4. From the start of the railroad retirement system through 1984, earnings up to a monthly maximum amount were taxed and credited for benefit computation purposes. Social security has always used an annual earnings limit. The 1983 Solvency Act changed railroad retirement to an annual earnings limit for 1985 and later years, but benefit computations for new beneficiaries will reflect the pre-1985 use of a monthly limit for many years into the future. All benefits awarded before 1985 reflect a monthly limit exclusively.

The formula used to compute the tier 2 component of railroad retirement is comparable to a private pension formula. Under the formula adopted in 1981, the employee tier 2 benefit is equal to 0.7 percent of the employee's average monthly railroad earnings for the 60 months of highest earnings, multiplied by the number of years of railroad service, less 25 percent of any vested dual benefit. Unlike private pensions, tier 2 benefits provide automatic cost-of-living increases, and are paid to spouses, surviving children and widows without any reduction in employee benefit for the payment of auxiliary benefits.

The tier 2 benefit for spouses is equal to 45 percent of the employee's tier 2 benefit. The 1981 amendments brought about a transition to a new survivor benefit formula. For any survivor awarded a benefit after September 30, 1986, the survivor's tier 2 benefit is a specified percentage of the employee's tier 2 benefit. The Appendix lists the percentages.

The tier 2 cost-of-living increases for employees, spouses and survivors are equal to 32.5 percent of the percentage increase which is used in computing social security increases (and tier 1 increases). The increase is paid at the same time as the tier 1 cost-of-living increase.

The portion of tier 1 benefits which is considered equivalent to social security benefits is subject to Federal income tax under the rules that apply to social security benefits. Tier 2 benefits, the portion of tier 1 benefits in excess of social security benefits, supplemental annuity benefits, and vested dual benefits are subject to Federal income tax under the rules that apply to private pensions.

Benefits paid from the RR and SSEB Accounts are financed by the following sources of income:

1. Payroll tax. Employees and employers pay a tax at the social security rate on earnings in a year up to the social security, or tier 1, earnings limit (the hospital insurance portion of this rate is not subject to an earnings limit). This tax is called the tier 1 tax. In addition, under the 1987 Budget Reconciliation Act, employers pay a tier 2 tax equal to 16.10 percent of the employee's earnings up to the tier 2 earnings limit, and employees pay a tier 2 tax of 4.90 percent. The tier 2 earnings limit is what the social security limit would be if the 1977 social security amendments had not been enacted. The 2000 earnings limits are \$76,200 and \$56,700 for tier 1 and tier 2, respectively.
2. Income tax. The tax on tier 1 benefits up to the social security level is credited to the SSEB Account and then to social security through the financial interchange. Revenue derived from taxing RR Account benefits (tier 2 and the excess of tier 1 over the social security level) is transferred to the RR Account.
3. Work-hour tax. Part of the tax collected for the Railroad Retirement Supplemental Account, which is computed in terms of cents per hour worked, is transferred to the RR Account. This will be discussed in part B, where supplemental annuities and their financing are described.
4. Investment income.
5. The financial interchange with the social security system. This extremely important arrangement, which will be discussed in detail in Section IV, has resulted in the large annual lump sum transfers of money from social security to railroad retirement shown in Table 12.
6. Advances from general revenues related to certain features of the financial interchange. Financial interchange transfers are made in a lump sum for a whole fiscal year in the June following the end of that fiscal year. For example, the transfer reflecting transactions which occurred from October 1997 through September 1998 (fiscal year 1998) took place in June 1999. At any time, therefore, there are between 9 and 21 months' worth of financial interchange transfers that are, in a sense, owed to the railroad retirement system. Railroad retirement receives interest on this money, so this practice does no long-term harm to the financial condition of the railroad retirement system. The lag in the transfers, however, could cause short-term cash flow problems.

In order to avoid the cash flow problems caused by this lag, the 1983 Solvency Act provided for monthly loans to railroad retirement from U.S. Treasury general funds. Each loan is equal to the transfer the Railroad Retirement Board estimates railroad retirement would have received in the preceding month, with interest, if the financial interchange with social security were on an up-to-date basis. Railroad retirement must repay these loans when it receives the transfer from social security against which the money was advanced.

The 1983 Solvency Act created the SSEB Account, effective October 1, 1984. Before that date, all tier 1 benefits, tier 2 benefits, lump sums and administrative expenses had been paid from the RR Account, and all the income described above had been credited to the RR Account. Since then, the SSEB Account has paid the social security level of benefits and the administrative expenses allocable to that level of benefits. The tier 1 portion of the payroll tax, the income taxes on the social security level of benefits, the income from the financial interchange, and the advances from general revenues are credited to the SSEB Account. Repayment of the advances is made from the SSEB Account.

If the balance in the SSEB Account is insufficient to pay benefits, the RR Account must lend the SSEB Account the amount required to enable it to meet its obligations. The SSEB Account is to pay any debt built up in this manner by transferring to the RR Account the amounts it receives through the financial interchange and the general revenue advances, up to the amount of the outstanding loan.

The SSEB Account must transfer money to the RR Account if (1) the balance in the RR Account is insufficient to enable it to pay benefits, and (2) the transfer will not jeopardize the payment of SSEB benefits. These transfers are not required to be repaid.

B. The Railroad Retirement Supplemental Account

A railroad retiree may receive a supplemental annuity in addition to his regular annuity if (1) the retiree has a "current connection" with the railroad industry at the time of retirement, and (2) the retiree has attained age 65 with 25 years of railroad service, or attained age 60 with 30 years of railroad service. A current connection is generally defined as at least 12 months of railroad service in the 30 months preceding retirement.

The 1981 amendments added the requirement that an employee must have worked in the railroad industry before October 1, 1981, to receive a supplemental annuity. This provision will result in phasing out the supplemental annuity over a long period. The first effect will not occur until October 2006. The last supplemental annuity check will probably not be paid until after 2060.

The monthly supplemental annuity benefit is \$23, plus \$4 for each year of service in excess of 25, with a maximum benefit of \$43. No cost-of-living increases are applied. Spouses and survivors do not receive a supplemental annuity.

If the recipient of a supplemental annuity receives a private pension from his railroad employer, the supplemental annuity is reduced by the portion of the private pension that is attributable to the employer's contributions. This reduction is not made if the private pension is reduced for receipt of the supplemental annuity. The Railroad Retirement Board returns the resulting savings in supplemental annuities to the employer in the form of tax credits.

Employers bear the full cost of supplemental annuities. Financing is on a pay-as-you-go basis. The tax rate is promulgated by the Railroad Retirement Board every quarter and is expressed in terms of cents per hour worked. For the first half of 2000, the rate is 26½ cents per hour. The Railroad Retirement Board attempts to set a rate which will hold for an entire calendar year; but a decision is made every quarter, and a change during the year is possible. Supplemental annuities awarded before 1975 were equal to \$45 per month, plus \$5 per month for each year of service in excess of 25, with a maximum benefit of \$70. The work-hour tax is calculated to be enough to pay benefits on the basis of this formula. Since awards after 1974 are based on the \$23-\$43 formula described earlier, the tax income is more than sufficient to pay the benefits. The excess is transferred from the Railroad Retirement Supplemental Account to the RR Account to finance the increase in costs resulting from the elimination (in the 1974 Act) of the reduction in the regular annuity for receipt of a supplemental annuity.

Employers maintaining negotiated pension plans are exempt from the work-hour tax with respect to employees covered by the negotiated plans. The employees, however, are entitled to supplemental annuities under the same conditions as all other employees. Employers pay for these annuities on an actual cost basis.

IV. DUAL BENEFITS, THEIR FINANCING, AND THE FINANCIAL INTERCHANGE

In the early 1950's, an arrangement known as the financial interchange was established between the railroad retirement and social security systems. The purpose of the financial interchange is to place the social security trust funds in the same financial position they would have been in if railroad employment had always been covered under social security. If railroad employment had been covered under social security, social security would have collected taxes on railroad employment, and it would have paid benefits based on railroad employment. Under the financial interchange, the railroad retirement system gives the social security system the taxes social security would have collected, and the social security system gives the railroad retirement system the additional benefits social security would have paid to railroad workers and their families over what it actually pays them.

The word "additional" in the preceding sentence is important, because it is possible for a railroad employee to be covered under both railroad retirement and social security. The social security coverage may be based on earnings from moonlighting while in a railroad job or from coverage under the two systems at different times. Fulfilling the purpose of the financial interchange requires deducting from social security's fund only the difference between what social security would have paid had it covered railroad employment, and what it actually pays the person based on his non-railroad employment. Under the financial interchange, therefore, social security subtracts an

employee's social security benefit from the amount it would otherwise give to the railroad retirement system.

This arrangement gave rise to problems that became acute in the early 1970's. The problems arose from the weighting in the social security formula in favor of low-earning, short-service workers. A railroad employee's non-railroad earnings usually added little to the benefit social security would have paid on combined railroad and non-railroad earnings (called gross tier 1 today). However, the employee might qualify for the minimum social security benefit, receiving much more from social security than his non-railroad earnings added to his gross tier 1 benefit.

The following example of two hypothetical employees may clarify the problem. The size of the benefits is appropriate to the early 1970's. The employees are assumed to have identical dates of birth, dates of retirement, and histories of railroad earnings. One employee, however, is assumed to have had just enough covered employment under social security to qualify for a social security benefit. (The difference in railroad retirement benefits arises from minor reductions in the 1937 Act formula for receipt of a social security benefit.)

	<u>Eligible for social security</u>	<u>Not eligible for social security</u>
A. Railroad retirement benefit	\$380	\$400
B. Social security benefit	100	-
C. Total benefit, A + B	480	400
D. Social security benefit on combined earnings (gross tier 1)	240	220
E. Financial interchange transfer from social security to railroad retirement, D – B	140	220
F. Amount to be financed by excess of railroad retirement taxes over social security taxes, A – E	240	180

Two conclusions are apparent. First, the employee with benefits under both systems received an advantage over the career railroad worker, which many considered unfair. In the example, the employee who is eligible for social security collects \$80 more than the employee who is not eligible (the difference in line C); while, under a completely integrated system, the social security earnings would have added only \$20 (the difference in line D). Second, because social security subtracted the social security benefit in calculating the financial interchange transfer, railroad retirement paid most of the cost of these benefits. In the example, this is represented by the \$60 difference in line F.

This situation was a major cause of the poor financial condition of the railroad retirement system in the early 1970's. In order to improve the system's financial condition, the Railroad Retirement Act of 1974 provided that the tier 1 component of the railroad retirement annuity be reduced by any social security benefit. This essentially integrated the two systems and eliminated the advantage of qualifying for benefits under both systems.

However, it was generally considered unfair to eliminate this advantage entirely for those already retired or close to retirement when the 1974 Act became effective. The 1974 Act, therefore, provided for a restoration of social security benefits that were considered vested at the end of 1974. The restored amount is known as the "vested dual benefit". This benefit was available to qualifying spouses and survivors as well as to qualifying employees.

For employees retiring in 1975 or later, the vested dual benefit was to be equal to

- (1) a social security benefit based on social security earnings, plus
- (2) a social security benefit based on railroad earnings, minus
- (3) a social security benefit based on combined railroad and social security earnings.

Social security or railroad earnings after 1974 were not to be included in this calculation. The "social security benefit" referred to in (1), (2) and (3) is the one which would have been calculated at the end of 1974. The resulting amount was to be increased by all the automatic social security cost-of-living adjustments between 1974 and the date the employee retired.

For spouses and survivors, the formulas were different and more complicated than those for employees.

The 1981 amendments made significant changes regarding vested dual benefits. Spouses and survivors were not to be awarded vested dual benefits after August 13, 1981, though they would continue to receive these benefits if they were awarded before that date. Also, vested dual benefits awarded to employees would take into account cost-of-living increases only through 1981, rather than through the date of retirement.

Since October 1981, vested dual benefits have been paid from a segregated Dual Benefits Payments Account, and appropriations have been made to that account. This means that, starting in fiscal year 1982, each annual appropriation is to be sufficient to pay the benefits for that year. If the appropriation for a fiscal year is less than required for full funding, the Railroad Retirement Board must reduce benefits to a level that the amount appropriated will cover.

The appropriation for vested dual benefits in fiscal year 1982 was less than required for full funding, resulting in a cutback in benefits during that year. Full funding was restored for the last two months of fiscal year 1982. The appropriation was less than required in fiscal year 1986, resulting in a cutback during April-September of that year. The appropriation was again less than required in fiscal year 1988, which resulted in a cutback during April-September. Benefits were cut back in January 1996 due to a lapse in government funding and then restored later that same month. For years other than those mentioned, full benefits have been paid.

V. ASSUMPTIONS, METHODOLOGY, AND VALUATION RESULTS

A. Assumptions and Methodology

Average railroad employment is assumed to be 255,000 in 1999 under each of the three employment assumptions. This is the estimated average for the year (subject to later adjustment) and exceeded the range projected for 1999 under the employment assumptions contained in the 1999 actuarial report.

Employment assumptions I and II, based on a model developed by the Association of American Railroads, assume that (1) passenger employment will remain at the level of 45,000, and (2) the employment base, excluding passenger employment, will decline at a constant annual rate (1.5 percent for assumption I and 3.0 percent for assumption II) for 25 years, at a reducing rate over the next 25 years, and remain level thereafter.

Employment assumption III differs from employment assumptions I and II by assuming that (1) passenger employment will decline by 500 per year until a level of 35,000 is reached and then remain level, and (2) the employment base, excluding passenger employment, will decline at a constant annual rate of 4.5 percent for 25 years, at a reducing rate over the next 25 years, and remain level thereafter.

The rates of decline in freight employment are 0.5% lower during the first 25 years under each employment assumption than assumed in the 20th valuation. In addition, the minimum passenger employment assumed under employment assumption III in the 20th valuation was 30,000.

Because inflation has been fairly stable at relatively low levels in recent years, only one set of earnings and price inflation assumptions was used in this valuation. The ultimate earnings increase and interest rate assumptions are the same as those used in the previous valuation. The ultimate cost-of-living increase assumption has been lowered to 3.2% in the 21st valuation from 3.5% in the 20th valuation in order to reflect methodological changes made in the computation of the CPI by the Bureau of Labor Statistics. Table 1 shows the employment, inflation and interest rate assumptions used in the 21st valuation. A comparison of historical and projected employment is illustrated in Figure 1.

Only one combination of non-economic assumptions (for example, rates of mortality, disability, retirement, and withdrawal) was used in this valuation. These assumptions, some of which were changed from the previous valuation to reflect recent experience, are discussed in the Technical Supplement to this report.

Projections were made for the various components of income and outgo under each employment assumption for the 75 calendar years 1999-2073. The projections of these components were combined and the investment income calculated to produce the projected balances in the RR and SSEB Accounts separately for each year. The results are summarized in Table 3. Present values of the various components of RR Account income and outgo were calculated by discounting amounts in each projection year to December 31, 1998, using the interest rate series shown in Table 1. The

present values were combined to calculate the RR Account actuarial surplus or deficiency. The derivation of the surplus or deficiency appears in Table 7 and is illustrated in Figure 2.

B. Valuation Results

This section sets forth the results of the valuation in the form of a discussion of the tables in which the results appear. Because it is desirable for the discussion of a table to be reasonably self-contained, there is some repetition between tables and between this section and preceding sections of this report.

Table 3. Progress of the Railroad Retirement (RR) and Social Security Equivalent Benefit (SSEB) Accounts. Projections were made for the various components of income and outgo under each employment assumption for the 75 calendar years 1999-2073. The projections of these components were combined and the investment income calculated to produce the projected balances in the RR Account and the SSEB Account at the end of each projection year. The results are summarized in Table 3.

Table 3 consists of three tables, one for each of employment assumptions I, II, and III. The tables show, for each account, (1) the various elements of income and outgo, (2) the account balance on December 31, and (3) the interplay between the two accounts when the SSEB Account must transfer money to the RR Account. The tables also show combined balances for the two accounts.

Table 3 indicates that no cash-flow problems arise under employment assumptions I and II (Tables 3-I and 3-II). Under employment assumption I, the RR Account balance grows throughout the projection period. Under employment assumption II, the RR Account balance grows to \$25,848 million in 2017, declines to \$25,445 million in 2023, and grows thereafter through the end of the projection period.

Under employment assumption III, the RR Account balance builds to a maximum of \$21,250 million in 2009, and then it begins to decline (Table 3-III). The RR Account balance would become negative in 2026 if no money were allowed to be transferred from the SSEB Account. By the end of 2025, the SSEB Account has built up a balance of \$12,938 million, mainly for the reasons given in the comments to Table 7. The SSEB Account transfers enough money to the RR Account from 2026 until 2034 to enable the RR Account to meet its obligations. The SSEB Account balance is depleted in 2035, and the combined accounts have a negative balance beginning in that year. Negative after-transfer balances indicate the amount that the RR Account would owe, including interest, if it could pay unreduced benefits by borrowing from some unknown source. The SSEB Account is assumed to transfer to the RR Account any excess of income over outgo in 2036 and later. The combined account deficit grows until 2055, when the balance reaches -\$21,743 million. The balance then begins to improve, and it becomes positive in 2068.

Table 4. Present value of benefits in millions of dollars. This table shows, for each employment assumption, the present value of tier 2 benefits and the portion of tier 1 benefits which exceeds the social security level of benefits. The portion of tier 1 benefits in excess of the social security level is referred to as "tier 1 liability". The most important components of this liability were described in Section III. The present values are shown separately by type of beneficiary (employee, spouse,

aged and disabled widow (er), other survivor) and by employee status on the valuation date (retired, retired and deceased, active, inactive, future entrants).

Table 5. Present value of benefits as a percentage of the present value of tier 2 payroll. The format for this table is the same as for Table 4. Each number in Table 5 was obtained by dividing the corresponding number in Table 4 by the appropriate present value of one percent of tier 2 payroll. The payroll figures are shown in Table 7.

Table 6. Balance of the Railroad Retirement and Social Security Equivalent Benefit Accounts as of December 31, 1998. This table derives the balance in the two accounts on an accrual basis as of December 31, 1998. The accrual adjustment is the amount due and unpaid on that date. The accrual basis is appropriate for present value calculations.

The item captioned "Future income from market-based specials" is the present value, as of December 31, 1998, of the income stream flowing from the securities shown in Table 2 and any securities sold during calendar year 1999. The income stream from these securities consists of coupons and face amounts available at maturity. The purchase price of market-based specials purchased in 1999 was regarded as a negative income item in 1999 in the calculation of this present value. It is assumed that market-based specials are held to maturity, at which time the proceeds are invested in par value specials.

The amount captioned "Financial interchange - OASDI" is the transfer from social security to the SSEB Account of the excess of the OASDI (Old-Age, Survivors, and Disability Insurance) benefit payments and related administrative expenses due the railroad retirement system over the OASDI taxes due social security. The transfer is made in June for the fiscal year ending the preceding September 30. The \$4,583 million in the table is the amount transferred in June 1999 for the fiscal year ending September 30, 1998, plus that part of the transfer to be made in June 2000 that relates to experience for October-December 1998.

The amount captioned "Financial interchange - HI" is the transfer from the SSEB Account to social security of the hospital insurance taxes collected by the Railroad Retirement Board. The period covered is the same as for the OASDI accrual adjustment.

The item "Advances against the financial interchange" is the amount, including interest to December 31, 1998, that the Treasury has loaned to the SSEB Account in anticipation of the SSEB Account's receipt of the financial interchange transfer from social security. As explained in Section III, the SSEB Account will repay the advances made in a fiscal year when it receives the financial interchange transfer for that year; in the meantime, this item is a liability.

Table 7. Actuarial surplus or (deficiency) for Railroad Retirement Account. The top half of Table 7 expresses the asset and liability components of the actuarial balance as present values in dollars. The bottom half expresses these components as a percentage of tier 2 payroll. The actuarial surplus or deficiency was calculated for the RR Account, but not for the SSEB Account, for the following reason.

The SSEB Account pays the social security level of benefits and administrative expenses allocable to those benefits, and it receives as income the social security level of taxes. If there were no other source of income or outgo during the course of a year, a surplus or deficiency would build up, depending on whether taxes exceeded or were less than benefits. However, the SSEB Account also receives or pays any financial interchange transfers. The financial interchange transfer, subject to qualifications described in the next paragraph, should be enough to offset any surplus or deficit for the year. Furthermore, this would be the case even if the social security level of benefits or taxes are raised or lowered. The SSEB Account can thus be regarded as automatically funded, the financial interchange being the mechanism for correcting any surplus or deficiency. Therefore, the concept of actuarial balance is not meaningful when applied to the SSEB Account.

The qualification mentioned above arises because, in a relatively small number of cases, the railroad retirement system does not pay benefits when social security would pay benefits. In these cases, mainly dependent children of retired railroad employees, the SSEB Account collects an amount through the financial interchange but does not pay a corresponding benefit. This imbalance between outgo and income is relatively small in any particular year, but substantial balances build up in the SSEB Account after a number of years.

As described in part A of Section III, the SSEB Account must transfer money to the RR Account if (1) the balance in the RR Account is insufficient to enable it to pay benefits, and (2) the transfer will not jeopardize the payment of SSEB Account benefits. There is no requirement that these transfers be repaid. The value of these transfers, or amounts available for transfer, is shown as an asset in Table 7 as "Available from SSEB Account."

As explained in part B of Section III, the work-hour tax levied on employers to finance the supplemental annuity program is calculated to be enough to pay benefits on a formula which provides \$45 per month, plus \$5 per month for each year of service in excess of 25, with a maximum benefit of \$70. Supplemental annuities awarded after 1974 are based on a formula which provides \$23 per month, plus \$4 per month for each year of service in excess of 25, with a maximum benefit of \$43. The excess tax is transferred from the Railroad Retirement Supplemental Account to the RR Account to finance the increase in costs resulting from the elimination (in the 1974 Act) of the reduction in the regular annuity for receipt of a supplemental annuity. The present value of these transfers is an asset, shown in Table 7 as "Transfers from supplemental account."

Revenue derived from taxing RR Account benefits (tier 2 and the excess of tier 1 over the social security level) is transferred to the RR Account. The present value of these transfers is shown as an asset in Table 7 as "Income taxes on benefits."

The cost of the system to the railroad industry may be considered as the excess of "Retirement taxes" over "Actuarial surplus or (deficiency)". Table 7 shows that the cost of the system is much more stable when expressed in dollars than when expressed as a percentage of payroll. For example, the cost of the system under employment assumption III is \$47,932 million, or 20.82 percent of payroll; whereas the cost under employment assumption I is \$54,089 million, or 15.25 percent of payroll. Using employment assumption III as the base, the percentage cost variation in dollars between the two valuations is 12.8 percent. As a percentage of payroll, the percentage cost variation is 26.8 percent.

Table 8. Minimum contribution required under ERISA. The railroad retirement system is specifically exempt from the minimum funding provisions of the Employee Retirement Income Security Act (ERISA). In the past, there has been some interest in what the contribution requirement of the system would be if this were not the case. The following discussion is limited to the regular minimum funding standard (ERISA Section 302(b)) for multiemployer plans.

The funding goal of the railroad retirement system is to receive enough funds each year to cover benefits and expenses for the year, and to maintain a reasonable account balance. In terms of the participants in the system, payroll taxes collected each year from rail employers and employees are used to pay benefits to rail retirees, their spouses and survivors. In contrast, ERISA essentially requires that pension plans be "advance-funded". Under this arrangement, the goal is to receive enough funds each year over the employees' working lifetimes to fully fund their retirement benefits.

ERISA recognizes that when a private pension plan is initiated, it will usually have an "accrued liability". This liability represents the value placed on future benefits and expenses of the plan that is attributable to employee service preceding the date of the plan (often referred to as "past service"). As such, the liability might be measured by the amount that would have been accumulated if contributions to fund each employee's benefits had been made from the time employment began. Since a new plan would have no funds at the time it is initiated, the accrued liability is also the unfunded accrued liability. The unfunded accrued liability is specifically identified by ERISA, because ERISA has separate funding rules for benefits based on past and future service.

In the case of an existing pension plan which becomes subject to ERISA funding standards, as for a new plan, the accrued liability must be determined. This determination is made based on employee service preceding the date the plan becomes subject to ERISA standards, but taking into account projected future levels of employee pay. The unfunded accrued liability for an existing plan is the excess of the accrued liability over the funds on hand.

Table 8 illustrates what the minimum funding requirements would be for the railroad retirement system as of December 31, 1998, using the entry age normal actuarial funding method, if it became subject to ERISA on that date. The unfunded accrued liability of \$39,661 million shown in Table 8 may be considered to be the amount needed, in excess of funds on hand and tier 2 payroll taxes at a 7.84 percent rate, to fund RR Account benefits and expenses for former and present employees. The 7.84 percent rate (normal cost rate) is the average cost expressed as a percentage of tier 2 payroll that would fund each employee's benefits and expenses over the employee's working lifetime.

Under ERISA requirements, the minimum annual contribution to be made would be equivalent to tier 2 payroll taxes at the rate of 7.84 percent, plus the level annual amount which would amortize the unfunded accrued liability of \$39,661 million in 30 years. The level amount is shown as \$2,790 million in line 8 of the table.

Since the amortization payment is a level dollar amount, and since the taxable payroll would change from year to year, the required contribution expressed as a percentage of payroll would vary during the amortization period. Line 9 of the table shows the level percentage of tier 2 payroll that would be required to fund the unfunded accrued liability and meet a 7.84 percent payroll tax over the 30 year amortization period. Under the ERISA requirements, the minimum annual contribution after 30 years, if all assumptions were realized, would be the 7.84 percent of payroll normal cost.

In summary, the effect of ERISA would be to accelerate funding for the railroad retirement system. Contributions equivalent to an average of 25.36 to 30.94 percent of tier 2 payroll would be required for 30 years with 7.84 percent contributions thereafter.

Table 9. Vested dual benefit amounts and average number of beneficiaries. This table shows a projection of vested dual benefit payments for every fiscal year from 2001 through 2030. After 2030, the amounts become insignificant. The amounts shown assume that the benefits are fully funded. Fiscal years are shown because vested dual benefit appropriations are made on a fiscal year basis. The table also indicates the average number of vested dual beneficiaries in each fiscal year. The table applies to all the employment assumptions discussed in this report.

The revenue derived from taxing pre-October 1988 vested dual benefits was transferred to the RR Account. The revenue derived from taxing vested dual benefits in fiscal years 1989 and later is transferred to the Dual Benefits Payments Account, and it reduces the amount of the appropriation by the same amount. Therefore, the amount available for the payment of vested dual benefits is unaffected by income tax revenues derived from these benefits.

The 1981 amendments removed much of the uncertainty from projections of future vested dual benefit payments. The volatility caused by inflation is gone, since future awards take into account cost-of-living increases from 1975 through 1981, rather than through the date of retirement. Also, awards of these benefits to spouses and widows ceased after August 13, 1981. Uncertainties which remain in projecting future vested dual benefit payments are when employees will retire, what their benefits will be, and when beneficiaries will die.

The projections of vested dual benefit payments by the Railroad Retirement Board are the basis for the agency's requests for appropriated amounts. Generally, a margin of about 2 percent is added to projected amounts to determine the appropriated amounts requested. This margin is needed because of the uncertainties in making projections and to ensure that adequate funds are available for the full payment of vested dual benefits. Appropriated amounts remaining in a fiscal year after all benefit payments have been made are returned to the Treasury.

Table 10. Progress of the Railroad Retirement Supplemental Account. This table shows, for each employment assumption used in this report, the tax rates required to support the supplemental annuity program through 2030. The tax income must be enough to cover the benefits, administrative expenses and transfers to the RR Account.

Table 11. Average number of railroad retirement annuitants and number of annuitants per full time employee. The left half of Table 11 shows the average number of annuitants under each employment assumption, and the right half shows the average number per full time employee. Under employment assumption I, the average number of annuitants per full time employee decreases initially, then increases gradually to 2.45 in 2016 and 2017, and declines thereafter. A similar pattern is followed under employment assumption II, with a maximum of 3.08 annuitants per employee reached in 2021. Under employment assumption III, the average number of annuitants per full time employee increases steadily to 4.24 in 2024, and declines thereafter.

VI. STATEMENT OF ACTUARIAL OPINION

It is my opinion that (1) the techniques and methodology used herein to evaluate the financial and actuarial status of the Railroad Retirement System are generally accepted within the actuarial profession; and (2) the assumptions used and the resulting actuarial estimates are, in the aggregate, reasonable for the purpose of evaluating the financial and actuarial status of the trust funds, taking into consideration the experience and expectations of the program.

Frank J. Buzzi

Frank J. Buzzi

Chief Actuary, Railroad Retirement Board

Fellow of the Society of Actuaries

Member of the American Academy of Actuaries

Enrolled Actuary #99-4940

Table 1. Employment, inflation and interest assumptions

Calendar year	Average employment (thousands)			Percentage increase over prior year		Interest rate
	I	II	III	Earnings	Cost of living	
1999	255	255	255	2.7%	1.3%	5.7%
2000	252	249	245	4.0	2.4	6.0
2001	249	243	236	4.0	3.2	6.0
2002	246	237	226	4.0	3.2	6.0
2003	243	231	218	4.0	3.2	6.0
2004	240	225	209	4.0	3.2	6.0
2005	237	220	201	4.0	3.2	6.0
2006	234	215	194	4.0	3.2	6.0
2007	231	210	186	4.0	3.2	6.0
2008	228	205	179	4.0	3.2	6.0
2009	226	200	173	4.0	3.2	6.0
2010	223	195	166	4.0	3.2	6.0
2011	220	191	160	4.0	3.2	6.0
2012	218	186	154	4.0	3.2	6.0
2013	215	182	148	4.0	3.2	6.0
2014	212	178	143	4.0	3.2	6.0
2015	210	174	138	4.0	3.2	6.0
2016	207	170	133	4.0	3.2	6.0
2017	205	166	128	4.0	3.2	6.0
2018	203	163	123	4.0	3.2	6.0
2019	200	159	119	4.0	3.2	6.0
2020	198	156	115	4.0	3.2	6.0
2021	196	152	111	4.0	3.2	6.0
2022	193	149	108	4.0	3.2	6.0
2023	191	146	105	4.0	3.2	6.0
2024	189	143	101	4.0	3.2	6.0
2025	187	140	99	4.0	3.2	6.0
2026	185	138	96	4.0	3.2	6.0
2027	183	135	94	4.0	3.2	6.0
2028	181	133	91	4.0	3.2	6.0
2029	180	131	89	4.0	3.2	6.0
2030	178	129	87	4.0	3.2	6.0
2031	177	127	86	4.0	3.2	6.0
2032	175	125	84	4.0	3.2	6.0
2033	174	124	83	4.0	3.2	6.0
2034	173	122	81	4.0	3.2	6.0
2035	172	121	80	4.0	3.2	6.0
2036	171	120	79	4.0	3.2	6.0
2037	170	119	78	4.0	3.2	6.0
2038	169	118	77	4.0	3.2	6.0
2039	168	117	77	4.0	3.2	6.0
2040	168	116	76	4.0	3.2	6.0
2041	167	116	75	4.0	3.2	6.0
2042	167	115	75	4.0	3.2	6.0
2043	166	114	74	4.0	3.2	6.0
2044	166	114	74	4.0	3.2	6.0
2045	166	114	74	4.0	3.2	6.0
2046	165	113	74	4.0	3.2	6.0
2047	165	113	73	4.0	3.2	6.0
2048	165	113	73	4.0	3.2	6.0
2049	165	113	73	4.0	3.2	6.0
2050-2073	165	113	73	4.0	3.2	6.0

Figure 1. Average Railroad Employment 1937-2073, Historical and Projected

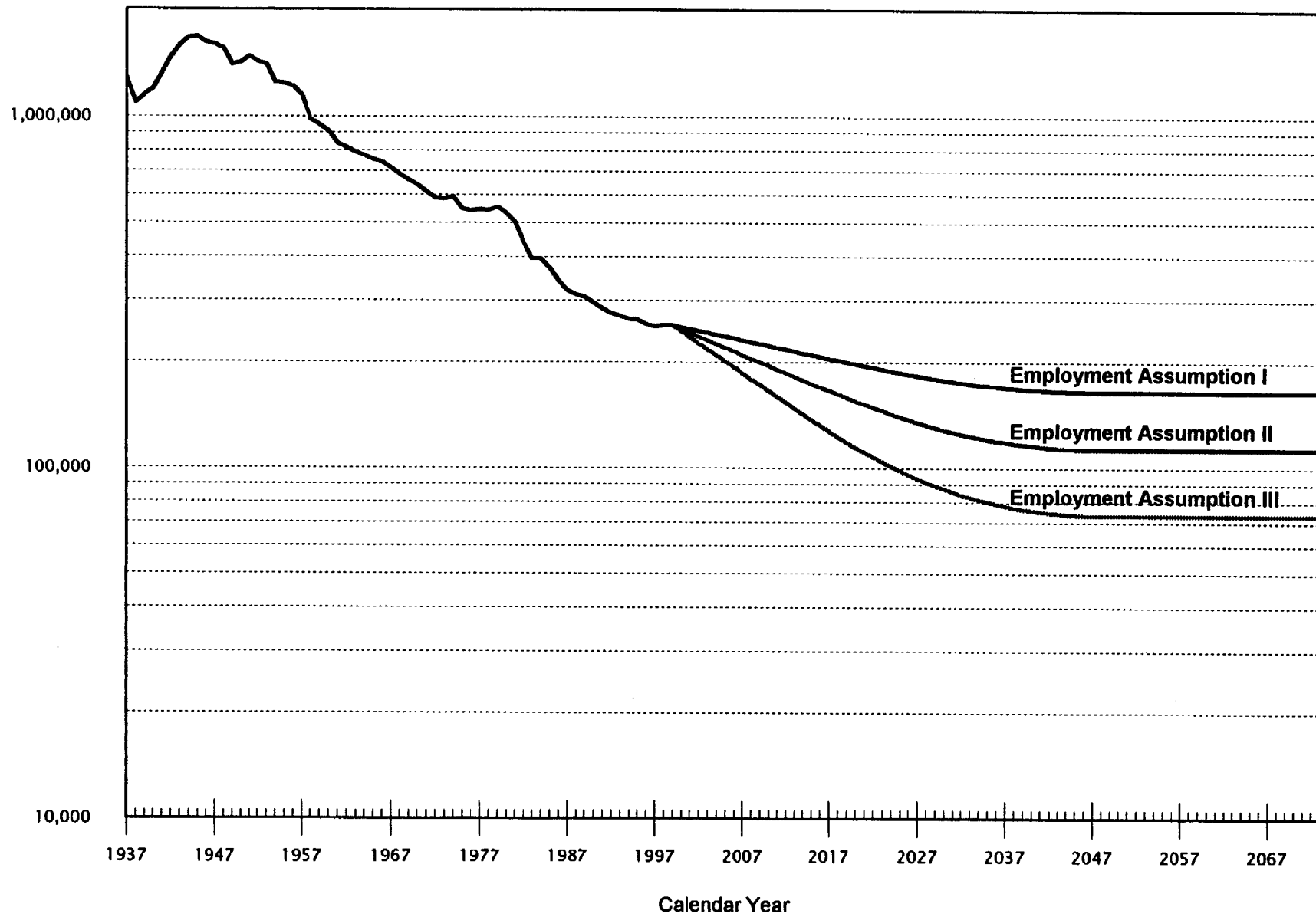


Table 2. Market-based holdings of Railroad Retirement Account as of December 31, 1999

Coupon rate	Date of maturity	Face amount	Book value	Market value	Accrued coupon
0.000%	15-Feb-09	\$ 182,000,000	\$ 115,041,923	\$ 99,298,570	\$ -
0.000	15-Nov-09	2,100,000,000	1,111,015,026	1,076,750,017	-
0.000	15-Feb-10	806,000,000	451,304,539	409,896,086	-
12.750	15-Nov-10	47,000,000	65,494,321	60,556,563	757,294
0.000	15-Feb-11	4,169,000,000	2,221,146,169	1,978,319,997	-
0.000	15-May-11	621,000,000	340,937,659	289,592,965	-
0.000	15-Aug-11	850,000,000	455,668,194	389,318,947	-
0.000	15-Nov-11	2,035,000,000	968,652,501	916,641,473	-
0.000	15-Feb-14	1,914,000,000	829,892,533	735,610,727	-
0.000	15-Aug-14	100,000,000	37,312,101	37,101,629	-
0.000	15-Nov-14	1,032,000,000	367,320,197	376,489,872	-
9.875	15-Nov-15	440,000,000	538,124,243	567,737,500	5,490,934
9.250	15-Feb-16	1,182,000,000	1,580,807,065	1,457,184,375	41,000,625

Table 3-I. Progress of the Railroad Retirement (RR) and Social Security Equivalent Benefit (SSEB) Accounts under Employment Assumption I
(Dollar amounts in millions)

Calendar year	Railroad Retirement Account				Social Security Equivalent Benefit Account				Combined RR and SSEB balance, end year
	Benefits and administration	Tax income ^a	Other income ^b	Balance, end year	Benefits and administration	Tax income ^c	Other income and expense ^d	Balance, end year	
2000	\$3,057	\$2,869	\$1,032	\$16,893	\$5,150	\$2,237	\$3,079	\$1,779	\$18,672
2001	3,130	2,938	1,032	17,733	5,246	2,292	3,138	1,963	19,696
2002	3,212	3,009	1,083	18,614	5,334	2,347	3,184	2,160	20,774
2003	3,299	3,081	1,136	19,532	5,428	2,403	3,235	2,370	21,902
2004	3,390	3,155	1,192	20,489	5,530	2,459	3,295	2,594	23,083
2005	3,488	3,231	1,250	21,482	5,638	2,516	3,361	2,833	24,315
2006	3,595	3,310	1,310	22,507	5,752	2,575	3,432	3,088	25,595
2007	3,713	3,391	1,372	23,557	5,872	2,635	3,509	3,360	26,917
2008	3,842	3,475	1,435	24,625	6,006	2,696	3,601	3,650	28,275
2009	3,981	3,561	1,499	25,704	6,170	2,758	3,722	3,960	29,664
2010	4,127	3,649	1,552	26,779	6,355	2,821	3,865	4,292	31,071
2011	4,278	3,742	1,626	27,869	6,551	2,888	4,017	4,646	32,515
2012	4,432	3,838	1,686	28,961	6,755	2,958	4,176	5,025	33,986
2013	4,588	3,937	1,751	30,061	6,971	3,030	4,346	5,429	35,490
2014	4,742	4,040	1,814	31,173	7,198	3,106	4,524	5,861	37,034
2015	4,893	4,146	1,867	32,293	7,428	3,185	4,704	6,323	38,616
2016	5,034	4,256	1,927	33,441	7,659	3,268	4,884	6,815	40,256
2017	5,164	4,368	1,995	34,641	7,888	3,356	5,057	7,341	41,982
2018	5,278	4,485	2,068	35,916	8,103	3,447	5,216	7,901	43,817
2019	5,375	4,605	2,145	37,291	8,305	3,544	5,357	8,498	45,789
2020	5,454	4,729	2,229	38,796	8,488	3,646	5,478	9,133	47,929
2021	5,514	4,857	2,322	40,460	8,649	3,752	5,573	9,808	50,268
2022	5,558	4,988	2,424	42,315	8,790	3,862	5,646	10,527	52,842
2023	5,589	5,123	2,539	44,388	8,915	3,976	5,702	11,290	55,678
2024	5,610	5,260	2,667	46,704	9,035	4,094	5,752	12,101	58,805
2025	5,627	5,403	2,809	49,290	9,154	4,216	5,800	12,962	62,252
2026	5,639	5,552	2,969	52,171	9,264	4,343	5,835	13,876	66,047
2027	5,653	5,707	3,146	55,371	9,370	4,476	5,865	14,847	70,218
2028	5,675	5,869	3,342	58,907	9,483	4,612	5,902	15,878	74,785
2029	5,705	6,037	3,558	62,797	9,615	4,754	5,955	16,973	79,770
2030	5,744	6,212	3,796	67,061	9,759	4,901	6,021	18,135	85,196
2031	5,792	6,397	4,056	71,723	9,903	5,055	6,082	19,369	91,092
2032	5,852	6,591	4,340	76,802	10,054	5,215	6,149	20,680	97,482
2033	5,924	6,792	4,649	82,318	10,226	5,381	6,236	22,071	104,389
2034	6,007	7,003	4,984	88,298	10,415	5,554	6,339	23,549	111,847
2035	6,098	7,225	5,347	94,772	10,609	5,735	6,443	25,119	119,891
2036	6,201	7,458	5,739	101,768	10,804	5,925	6,546	26,786	128,554
2037	6,320	7,702	6,163	109,313	11,012	6,123	6,658	28,555	137,868
2038	6,454	7,958	6,620	117,438	11,240	6,329	6,789	30,434	147,872
2039	6,601	8,227	7,111	126,174	11,485	6,545	6,935	32,430	158,604
2040	6,761	8,509	7,639	135,562	11,740	6,772	7,087	34,549	170,111
2045	7,773	10,156	10,918	193,765	13,242	8,087	8,016	47,280	241,045
2050	9,108	12,273	15,541	275,762	15,222	9,775	9,308	64,465	340,227
2055	10,643	14,898	22,037	391,010	17,684	11,883	11,008	87,650	478,660
2060	12,301	18,094	31,169	553,052	20,578	14,470	13,125	118,902	671,954
2065	14,228	21,979	43,983	780,318	23,999	17,621	15,825	160,990	941,308
2070	16,719	26,703	61,841	1,096,836	28,247	21,447	19,512	217,634	1,314,470
2073	18,597	30,018	75,699	1,342,293	31,337	24,128	22,398	260,626	1,602,919

^a Includes payroll taxes, income taxes on benefits and tax transfers from Railroad Retirement Supplemental Account.

^b Includes interest income and calendar year 2000 payments from SSEB Account.

^c Includes payroll taxes and income taxes on benefits.

^d Other income includes financial interchange income, advances from general revenues, and interest income. Other expense includes repayment of advances from general revenues and calendar year 2000 payments to RR Account

Table 3-II. Progress of the Railroad Retirement (RR) and Social Security Equivalent Benefit (SSEB) Accounts under Employment Assumption II
(Dollar amounts in millions)

Calendar year	Railroad Retirement Account				Social Security Equivalent Benefit Account				Combined RR and SSEB balance, end year
	Benefits and administration	Tax income ^a	Other income ^b	Balance, end year	Benefits and administration	Tax income ^c	Other income and expense ^d	Balance, end year	
2000	\$3,057	\$2,849	\$1,032	\$16,873	\$5,150	\$2,222	\$3,093	\$1,779	\$18,652
2001	3,130	2,886	1,029	17,658	5,246	2,252	3,178	1,963	19,621
2002	3,212	2,925	1,076	18,447	5,334	2,282	3,249	2,160	20,607
2003	3,299	2,964	1,123	19,235	5,428	2,312	3,326	2,370	21,605
2004	3,390	3,004	1,170	20,019	5,530	2,342	3,412	2,594	22,613
2005	3,488	3,045	1,216	20,792	5,638	2,371	3,506	2,833	23,625
2006	3,595	3,087	1,262	21,546	5,752	2,401	3,606	3,088	24,634
2007	3,713	3,131	1,306	22,270	5,872	2,431	3,713	3,360	25,630
2008	3,842	3,175	1,349	22,952	6,006	2,461	3,836	3,650	26,602
2009	3,981	3,221	1,388	23,580	6,170	2,490	3,990	3,960	27,540
2010	4,127	3,267	1,413	24,133	6,355	2,520	4,167	4,292	28,425
2011	4,278	3,316	1,455	24,625	6,550	2,552	4,353	4,646	29,271
2012	4,432	3,366	1,477	25,037	6,754	2,585	4,547	5,025	30,062
2013	4,587	3,419	1,500	25,369	6,968	2,620	4,753	5,429	30,798
2014	4,741	3,473	1,516	25,617	7,192	2,656	4,968	5,861	31,478
2015	4,890	3,529	1,515	25,771	7,419	2,695	5,185	6,322	32,093
2016	5,031	3,587	1,516	25,843	7,646	2,736	5,402	6,815	32,658
2017	5,158	3,646	1,518	25,848	7,868	2,780	5,613	7,340	33,188
2018	5,270	3,706	1,517	25,801	8,076	2,827	5,809	7,900	33,701
2019	5,364	3,769	1,513	25,720	8,269	2,877	5,988	8,496	34,216
2020	5,439	3,834	1,508	25,622	8,441	2,930	6,145	9,130	34,752
2021	5,495	3,900	1,503	25,531	8,588	2,986	6,276	9,805	35,336
2022	5,532	3,968	1,499	25,466	8,714	3,045	6,385	10,522	35,988
2023	5,554	4,037	1,496	25,445	8,821	3,107	6,476	11,283	36,728
2024	5,565	4,108	1,497	25,485	8,921	3,170	6,560	12,092	37,577
2025	5,568	4,182	1,501	25,599	9,015	3,236	6,638	12,950	38,549
2026	5,565	4,260	1,510	25,805	9,097	3,306	6,702	13,862	39,667
2027	5,561	4,344	1,525	26,112	9,172	3,380	6,759	14,829	40,941
2028	5,562	4,431	1,546	26,529	9,250	3,457	6,818	15,855	42,384
2029	5,568	4,524	1,574	27,059	9,341	3,538	6,893	16,944	44,003
2030	5,580	4,622	1,608	27,710	9,440	3,622	6,973	18,100	45,810
2031	5,595	4,728	1,650	28,493	9,530	3,712	7,044	19,327	47,820
2032	5,617	4,839	1,700	29,415	9,621	3,806	7,116	20,628	50,043
2033	5,646	4,956	1,758	30,482	9,728	3,904	7,205	22,009	52,491
2034	5,678	5,080	1,825	31,709	9,848	4,008	7,306	23,475	55,184
2035	5,712	5,212	1,902	33,111	9,959	4,118	7,396	25,031	58,142
2036	5,752	5,354	1,989	34,702	10,059	4,235	7,475	26,681	61,383
2037	5,802	5,502	2,087	36,490	10,166	4,356	7,560	28,432	64,922
2038	5,860	5,659	2,198	38,487	10,285	4,484	7,658	30,290	68,777
2039	5,924	5,825	2,321	40,709	10,415	4,619	7,767	32,261	72,970
2040	5,994	6,002	2,457	43,175	10,540	4,763	7,868	34,352	77,527
2045	6,474	7,063	3,385	59,831	11,251	5,615	8,446	46,880	106,711
2050	7,189	8,480	4,840	85,852	12,259	6,748	9,288	63,718	149,570
2055	8,045	10,263	7,057	125,459	13,601	8,181	10,497	86,351	211,810
2060	8,967	12,440	10,390	184,925	15,231	9,947	12,105	116,765	301,690
2065	10,075	15,090	15,324	272,828	17,226	12,102	14,286	157,618	430,446
2070	11,613	18,317	22,478	399,991	19,836	14,718	17,421	212,481	612,472
2073	12,829	20,585	28,153	500,725	21,807	16,552	19,940	254,060	754,785

^a Includes payroll taxes, income taxes on benefits and tax transfers from Railroad Retirement Supplemental Account.

^b Includes interest income and calendar year 2000 payments from SSEB Account.

^c Includes payroll taxes and income taxes on benefits.

^d Other income includes financial interchange income, advances from general revenues, and interest income. Other expense includes repayment of advances from general revenues and calendar year 2000 payments to RR Account

Table 3-III. Progress of the Railroad Retirement (RR) and Social Security Equivalent Benefit (SSEB) Accounts under Employment Assumption III
(Dollar amounts in millions)

Calendar year	Railroad Retirement Account				Social Security Equivalent Benefit Account				Transfers from SSEB to RR	Balance after		Combined RR and SSEB balance, end year
	Benefits and admin- istration	Tax income ^a	Other income ^b	Balance, end year ^c	Benefits and admin- istration	Tax income ^d	Other income and expense ^e	Balance, end year ^c		transfers from		
										SSEB to RR		
										RR	SSEB	
2000	\$3,057	\$2,827	\$1,031	\$16,850	\$5,150	\$2,206	\$3,109	\$1,779		\$16,850	\$1,779	\$18,629
2001	3,130	2,826	1,026	17,572	5,246	2,207	3,224	1,963		17,572	1,963	19,535
2002	3,212	2,829	1,068	18,258	5,334	2,209	3,322	2,160		18,258	2,160	20,418
2003	3,299	2,832	1,107	18,899	5,428	2,210	3,428	2,370		18,899	2,370	21,269
2004	3,390	2,836	1,144	19,489	5,530	2,211	3,543	2,594		19,489	2,594	22,083
2005	3,488	2,839	1,178	20,018	5,638	2,211	3,667	2,833		20,018	2,833	22,851
2006	3,595	2,843	1,208	20,475	5,752	2,210	3,797	3,088		20,475	3,088	23,563
2007	3,713	2,848	1,233	20,843	5,872	2,209	3,934	3,360		20,843	3,360	24,203
2008	3,842	2,853	1,253	21,107	6,006	2,207	4,090	3,650		21,107	3,650	24,757
2009	3,981	2,857	1,267	21,250	6,170	2,204	4,276	3,960		21,250	3,960	25,210
2010	4,126	2,862	1,261	21,246	6,355	2,201	4,486	4,292		21,246	4,292	25,538
2011	4,278	2,868	1,268	21,105	6,549	2,198	4,706	4,646		21,105	4,646	25,751
2012	4,431	2,875	1,251	20,800	6,751	2,196	4,934	5,025		20,800	5,025	25,825
2013	4,586	2,883	1,230	20,327	6,964	2,195	5,173	5,429		20,327	5,429	25,756
2014	4,739	2,891	1,196	19,675	7,186	2,195	5,423	5,861		19,675	5,861	25,536
2015	4,888	2,900	1,140	18,828	7,409	2,195	5,674	6,322		18,828	6,322	25,150
2016	5,026	2,910	1,079	17,790	7,630	2,197	5,925	6,814		17,790	6,814	24,604
2017	5,152	2,919	1,013	16,569	7,846	2,201	6,170	7,339		16,569	7,339	23,908
2018	5,261	2,928	937	15,174	8,046	2,206	6,400	7,898		15,174	7,898	23,072
2019	5,352	2,941	851	13,614	8,229	2,215	6,609	8,493		13,614	8,493	22,107
2020	5,424	2,959	756	11,905	8,389	2,229	6,793	9,127		11,905	9,127	21,032
2021	5,473	2,980	653	10,065	8,522	2,249	6,947	9,800		10,065	9,800	19,865
2022	5,503	3,003	542	8,107	8,631	2,271	7,076	10,516		8,107	10,516	18,623
2023	5,516	3,026	425	6,043	8,720	2,294	7,185	11,275		6,043	11,275	17,318
2024	5,515	3,051	302	3,881	8,798	2,319	7,285	12,082		3,881	12,082	15,963
2025	5,505	3,078	174	1,627	8,866	2,347	7,375	12,938		1,627	12,938	14,565
2026	5,485	3,109	40	(709)	8,917	2,378	7,447	13,845	\$ 688	-	13,136	13,136
2027	5,461	3,144	(99)	(3,125)	8,960	2,413	7,510	14,808	2,304	-	11,683	11,683
2028	5,439	3,182	(242)	(5,624)	9,001	2,450	7,572	15,830	2,244	-	10,206	10,206
2029	5,420	3,224	(390)	(8,211)	9,051	2,489	7,646	16,913	2,184	-	8,702	8,702
2030	5,403	3,270	(543)	(10,887)	9,102	2,531	7,720	18,062	2,120	-	7,175	7,175
2031	5,385	3,323	(702)	(13,651)	9,137	2,578	7,777	19,281	2,049	-	5,630	5,630
2032	5,368	3,379	(866)	(16,505)	9,168	2,628	7,831	20,573	1,976	-	4,068	4,068
2033	5,352	3,439	(1,035)	(19,452)	9,209	2,681	7,899	21,943	1,900	-	2,491	2,491
2034	5,331	3,504	(1,209)	(22,488)	9,259	2,738	7,975	23,397	1,814	-	909	909
2035	5,305	3,576	(1,388)	(25,605)	9,286	2,800	8,027	24,937	1,068	(668)	-	(668)
2036	5,279	3,654	(1,572)	(28,802)	9,291	2,867	8,057	26,571	134	(2,231)	-	(2,231)
2037	5,261	3,738	(1,761)	(32,086)	9,298	2,938	8,091	28,302	133	(3,784)	-	(3,784)
2038	5,243	3,826	(1,955)	(35,458)	9,311	3,012	8,134	30,138	134	(5,320)	-	(5,320)
2039	5,223	3,921	(2,154)	(38,914)	9,329	3,091	8,184	32,084	134	(6,830)	-	(6,830)
2040	5,203	4,024	(2,357)	(42,451)	9,329	3,178	8,214	34,146	133	(8,305)	-	(8,305)
2045	5,178	4,662	(3,447)	(61,373)	9,298	3,702	8,356	46,469	132	(14,904)	-	(14,904)
2050	5,354	5,552	(4,674)	(82,691)	9,458	4,418	8,736	62,966	136	(19,725)	-	(19,725)
2055	5,691	6,690	(6,061)	(106,812)	9,906	5,336	9,523	85,069	142	(21,743)	-	(21,743)
2060	6,119	8,089	(7,620)	(133,889)	10,617	6,471	10,787	114,698	152	(19,191)	-	(19,191)
2065	6,715	9,798	(9,353)	(163,962)	11,647	7,861	12,689	154,422	167	(9,540)	-	(9,540)
2070	7,634	11,886	(11,283)	(197,511)	13,154	9,553	15,540	207,688		9,576	601	10,177
2073	8,391	13,355	(12,557)	(219,709)	14,351	10,740	17,849	248,014		26,935	1,370	28,305

^a Includes payroll taxes, income taxes on benefits and tax transfers from Railroad Retirement Supplemental Account.

^b Includes interest income and calendar year 2000 payments from SSEB Account.

^c Balance is before transfers from SSEB Account to RR Account.

^d Includes payroll taxes and income taxes on benefits.

^e Other income includes financial interchange income, advances from general revenues, and interest income. Other expense includes repayment of advances from general revenues and calendar year 2000 payments to RR Account

Table 4. Present value of benefits in millions of dollars

	Employment assumption I			Employment assumption II			Employment assumption III		
	Tier 2	Tier 1 liability	Total	Tier 2	Tier 1 liability	Total	Tier 2	Tier 1 liability	Total
Employee annuities									
Retired	\$12,097	\$ 4,608	\$16,705	\$12,097	\$ 4,608	\$16,705	\$12,097	\$ 4,608	\$16,705
Active	19,193	7,155	26,348	19,193	7,155	26,348	19,193	7,155	26,348
Inactive	1,190	548	1,738	1,190	548	1,738	1,190	548	1,738
Future entrants	<u>6,872</u>	<u>3,081</u>	<u>9,953</u>	<u>5,010</u>	<u>2,243</u>	<u>7,254</u>	<u>3,302</u>	<u>1,478</u>	<u>4,780</u>
Total	39,352	15,392	54,744	37,490	14,555	52,045	35,781	13,790	49,571
Spouse annuities									
Retired	3,557	1,122	4,679	3,557	1,122	4,679	3,557	1,122	4,679
Active	4,954	1,852	6,806	4,954	1,852	6,806	4,954	1,852	6,806
Inactive	247	101	348	247	101	348	247	101	348
Future entrants	<u>1,449</u>	<u>517</u>	<u>1,966</u>	<u>1,060</u>	<u>380</u>	<u>1,440</u>	<u>699</u>	<u>251</u>	<u>950</u>
Total	10,207	3,593	13,800	9,818	3,456	13,273	9,457	3,327	12,783
Survivor annuities									
Retired & deceased	4,549	1,008	5,557	4,549	1,008	5,557	4,549	1,008	5,557
Active	2,414	388	2,802	2,414	388	2,802	2,414	388	2,802
Inactive	62	32	95	62	32	95	62	32	95
Future entrants	<u>774</u>	<u>191</u>	<u>965</u>	<u>570</u>	<u>140</u>	<u>710</u>	<u>376</u>	<u>92</u>	<u>468</u>
Total	7,799	1,620	9,419	7,595	1,569	9,164	7,401	1,521	8,922
All annuities combined									
Retired & deceased	20,203	6,739	26,941	20,203	6,739	26,941	20,203	6,739	26,941
Active	26,560	9,396	35,956	26,560	9,396	35,956	26,560	9,396	35,956
Inactive	1,499	682	2,181	1,499	682	2,181	1,499	682	2,181
Future entrants	<u>9,095</u>	<u>3,789</u>	<u>12,884</u>	<u>6,640</u>	<u>2,763</u>	<u>9,403</u>	<u>4,377</u>	<u>1,821</u>	<u>6,198</u>
Total annuities	\$57,357	\$20,605	\$77,962	\$54,902	\$19,580	\$74,482	\$52,639	\$18,637	\$71,277
Lump sum payments			<u>111</u>			<u>111</u>			<u>111</u>
Total benefits			\$78,073			\$74,592			\$71,387

Note: Detail may not add to totals due to rounding.

Table 5. Present value of benefits as a percentage of the present value of tier 2 payroll

	Employment assumption I			Employment assumption II			Employment assumption III		
	Tier 2	Tier 1 liability	Total	Tier 2	Tier 1 liability	Total	Tier 2	Tier 1 liability	Total
Employee annuities									
Retired	3.41%	1.30%	4.71%	4.20%	1.60%	5.80%	5.25%	2.00%	7.26%
Active	5.41	2.02	7.43	6.66	2.48	9.14	8.34	3.11	11.44
Inactive	0.34	0.15	0.49	0.41	0.19	0.60	0.52	0.24	0.75
Future entrants	1.94	0.87	2.81	1.74	0.78	2.52	1.43	0.64	2.08
Total	11.10	4.34	15.44	13.01	5.05	18.06	15.54	5.99	21.53
Spouse annuities									
Retired	1.00	0.32	1.32	1.23	0.39	1.62	1.54	0.49	2.03
Active	1.40	0.52	1.92	1.72	0.64	2.36	2.15	0.80	2.96
Inactive	0.07	0.03	0.10	0.09	0.04	0.12	0.11	0.04	0.15
Future entrants	0.41	0.15	0.55	0.37	0.13	0.50	0.30	0.11	0.41
Total	2.88	1.01	3.89	3.41	1.20	4.61	4.11	1.44	5.55
Survivor annuities									
Retired & deceased	1.28	0.28	1.57	1.58	0.35	1.93	1.98	0.44	2.41
Active	0.68	0.11	0.79	0.84	0.13	0.97	1.05	0.17	1.22
Inactive	0.02	0.01	0.03	0.02	0.01	0.03	0.03	0.01	0.04
Future entrants	0.22	0.05	0.27	0.20	0.05	0.25	0.16	0.04	0.20
Total	2.20	0.46	2.66	2.64	0.54	3.18	3.21	0.66	3.88
All annuities combined									
Retired & deceased	5.70	1.90	7.60	7.01	2.34	9.35	8.78	2.93	11.70
Active	7.49	2.65	10.14	9.22	3.26	12.48	11.54	4.08	15.62
Inactive	0.42	0.19	0.61	0.52	0.24	0.76	0.65	0.30	0.95
Future entrants	2.56	1.07	3.63	2.30	0.96	3.26	1.90	0.79	2.69
Total annuities	16.17%	5.81%	21.98%	19.05%	6.79%	25.85%	22.87%	8.10%	30.96%
Lump sum payments			0.03			0.04			0.05
Total benefits			22.01%			25.89%			31.01%

Note: Detail may not add to totals due to rounding.

Table 6. Balance of the Railroad Retirement and Social Security Equivalent
Benefit Accounts as of December 31, 1998
(Dollar amounts in millions)

	RR Account	SSEB Account
Securities:		
Par value specials ^a	\$ 7,697	\$ 2,068
Accrued interest	29	7
Future income ^b from market-based specials ^c	7,905	-
Cash accounts	<u>(1)</u>	<u>2</u>
Total securities	15,630	2,077
Benefit payments for December 1998, due January 4, 1999	<u>(245)</u>	<u>(413)</u>
Balance	15,385	1,664
Accrual adjustments:		
Retirement taxes	69	73
Financial interchange - OASDI	-	4,583
Benefit accruals	(13)	(15)
Financial interchange - HI	-	(522)
Advances against the financial interchange	<u>-</u>	<u>(3,788)</u>
Balance, accrual basis	\$15,441	\$ 1,995

^a Par value specials are securities issued by the Treasury directly to the Railroad Retirement and Social Security Equivalent Benefit Accounts, maturing on the first business day of the month following the month of issue. Their yield rate each month is the average yield rate, computed as of the last day of the previous month, of marketable Treasury notes with maturity dates not less than three years away.

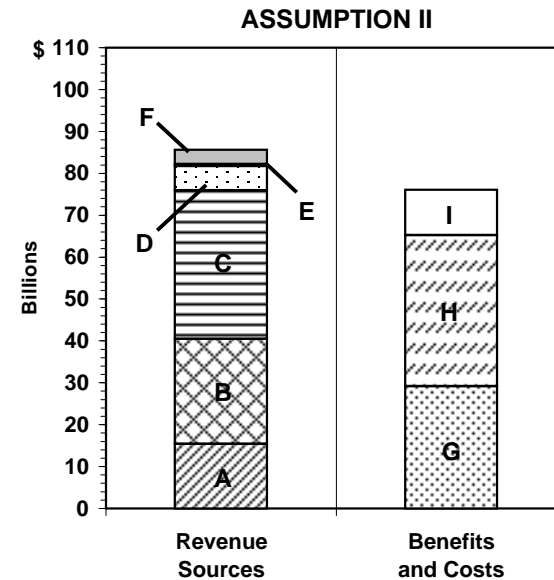
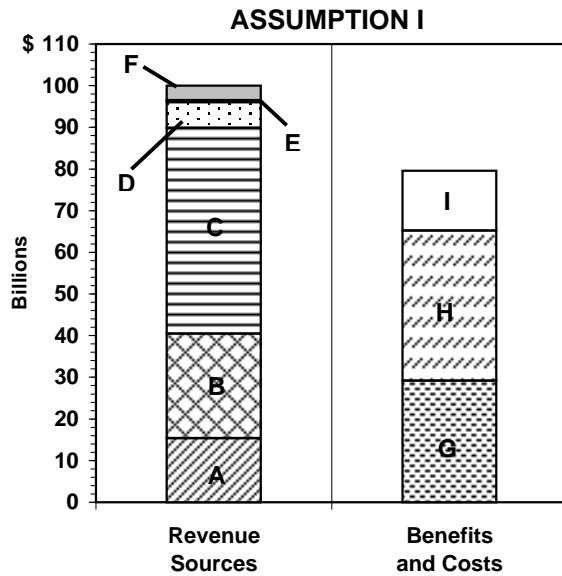
^b After allowing for market-based purchases in 1999.

^c A market-based special may be any marketable Treasury bill, note or bond, except that notes and bonds within six months of maturity are not currently available to the Railroad Retirement Board. The price is the same as the market price, but purchases and sales are made directly with the Treasury, so as not to affect the securities market.

Table 7. Actuarial surplus or (deficiency) for Railroad Retirement Account

	Employment assumption		
	I	II	III
Present values in millions of dollars			
Funds on hand, 12/31/98	\$ 15,441	\$ 15,441	\$ 15,441
Retirement taxes	74,477	60,513	48,346
Income taxes on benefits	6,077	5,815	5,574
Transfers from supplemental account	546	546	546
Available from SSEB Account	<u>3,461</u>	<u>3,378</u>	<u>3,301</u>
Total, present and prospective assets	100,002	85,693	73,208
Benefit payments	78,073	74,592	71,387
Administrative expenses	<u>1,541</u>	<u>1,471</u>	<u>1,407</u>
Total liabilities	<u>79,614</u>	<u>76,063</u>	<u>72,794</u>
Actuarial surplus or (deficiency)	<u><u>20,388</u></u>	<u><u>9,630</u></u>	<u><u>414</u></u>
One percent of tier 2 payroll	\$ 3,547	\$ 2,882	\$ 2,302
Present values as a percentage of tier 2 payroll			
Funds on hand, 12/31/98	4.35%	5.36%	6.71%
Retirement taxes	21.00	21.00	21.00
Income taxes on benefits	1.71	2.02	2.42
Transfers from supplemental account	0.15	0.19	0.24
Available from SSEB Account	<u>0.98</u>	<u>1.17</u>	<u>1.43</u>
Total, present and prospective assets	28.20	29.74	31.80
Benefit payments	22.01	25.89	31.01
Administrative expenses	<u>0.43</u>	<u>0.51</u>	<u>0.61</u>
Total liabilities	<u>22.45</u>	<u>26.40</u>	<u>31.62</u>
Actuarial surplus or (deficiency)	<u><u>5.75</u></u>	<u><u>3.34</u></u>	<u><u>0.18</u></u>

Figure 2. Actuarial Surplus or Deficiency for Railroad Retirement Account



Present value as of 12/31/98 of the projected cash flows during calendar years 1999-2073

- A** Assets as of 12/31/98
- B** Future tier 2 taxes for current employees
- C** Future tier 2 taxes for new entrants
- D** Income tax on benefits
- E** Future transfers from the Railroad Retirement Supplemental Account
- F** Amounts available from the Social Security Equivalent Benefit Account
- G** Future Railroad Retirement Account benefit and administrative costs for former employees and dependents
- H** Future Railroad Retirement account benefit and administrative costs for current employees and dependents
- I** Future Railroad Retirement Account benefit and administrative costs for new entrants and dependents

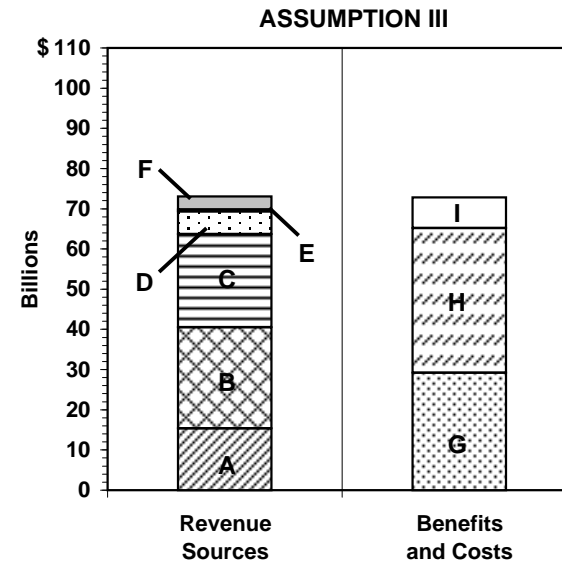


Table 8. Minimum contribution required under ERISA
(Dollar amounts in millions)

	Amount or rate
1. Present value of benefits for former and present employees	\$65,189
2. Present value of administrative expenses for former and present employees	1,285
3. Funds on hand 12/31/98 ^a	17,436
4. Present value of 1 percent of tier 2 payroll for present employees	1,196
5. Normal cost as a percentage of tier 2 payroll	7.84%
6. Present value of future service costs for present employees = (4) x (5)	9,377
7. Unfunded accrued liability = (1) + (2) - (3) - (6)	39,661
8. Level amount to fund accrued liability in 30 years	2,790
	Employment Assumption
	I II III
9. Level tax rate to fund accrued liability and meet normal costs for next 30 years	25.36% 27.78% 30.94%
10. Tax rate after 30 years (normal cost rate)	7.84% 7.84% 7.84%

^a The amount shown is the sum of the RR and SSEB Account balances shown in Table 6.

Table 9. Vested dual benefit amounts and average number of beneficiaries

Fiscal year	Vested dual benefit amounts ^a (Millions)	Average number of beneficiaries
2001	\$159	92,000
2002	146	83,000
2003	133	75,000
2004	121	67,000
2005	109	60,000
2006	97	53,000
2007	87	47,000
2008	78	42,000
2009	69	37,000
2010	61	32,000
2011	53	28,000
2012	46	24,000
2013	40	21,000
2014	35	18,000
2015	30	15,000
2016	25	13,000
2017	21	11,000
2018	18	9,000
2019	15	8,000
2020	12	6,000
2021	10	5,000
2022	8	4,000
2023	7	4,000
2024	5	3,000
2025	4	2,000
2026	3	2,000
2027	3	1,000
2028	2	1,000
2029	2	1,000
2030	1	1,000

^a When projected amounts are used to determine the appropriation needed for benefit payments, a margin must be added to ensure payment of full benefits.

Table 10. Progress of the Railroad Retirement Supplemental Account

Calendar year	Beneficiaries ^a	Net benefit payments ^{b,c} (Millions)	Transfer amount ^c (Millions)	Tax rate under each employment assumption (cents per hour) ^d		
				I	II	III
1999	145,700	\$77	\$45	27	27	27
2000	140,600	74	43	26½	26¾	27¼
2001	135,700	71	42	25¾	26½	27¼
2002	131,200	69	41	25¼	26¼	27½
2003	127,100	66	40	24¾	26	27¾
2004	123,500	64	39	24½	26	28
2005	120,300	63	38	24	26	28¼
2006	117,600	61	37	23¾	26	28¾
2007	115,400	60	37	23¾	26	29¼
2008	113,800	59	36	23½	26¼	30
2009	112,800	58	36	23¾	26¾	31
2010	112,200	58	36	23¾	27¼	32
2011	111,800	58	36	24	27¾	33
2012	111,500	58	36	24¼	28¼	34¼
2013	111,300	58	36	24½	29	35½
2014	111,100	57	36	24¾	29½	36¾
2015	110,600	57	35	25	30	38
2016	109,800	57	35	25	30½	39¼
2017	108,600	56	35	25	31	40¼
2018	106,900	55	34	25	31	41
2019	104,600	54	33	24¾	31	41¾
2020	101,700	53	33	24¼	31	42
2021	98,300	51	31	23¾	30½	41¾
2022	94,300	49	30	23	30	41½
2023	89,900	46	29	22¼	29	40¾
2024	85,200	44	27	21¼	28¼	39¾
2025	80,300	41	26	20¼	27	38½
2026	75,300	39	24	19¼	26	37¼
2027	70,400	36	23	18¼	24¾	35½
2028	65,500	34	21	17	23¼	34
2029	60,700	31	19	16	22	32¼
2030	56,000	29	18	15	20½	30¼

^a Average number in a year. Excludes cases where the supplemental annuity is totally eliminated because of a private pension. On January 1, 1999, there were about 36,000 of these cases.

^b Includes administrative expenses (\$2.2 million in 1999).

^c Benefit payments are on the \$70 maximum basis for accruals before 1975 and on the \$43 maximum basis for accruals after 1974. Taxes are collected on the \$70 maximum basis for all employees, and the difference is transferred to the Railroad Retirement Account.

^d Actual rate is shown for 1999. Actual rate for the first two quarters of 2000 is 26½ cents per hour.

Table 11. Average number of railroad retirement annuitants and number of annuitants per full time employee

Calendar year	Average number of annuitants under each employment assumption			Average number of annuitants per full time employee		
	I	II	III	I	II	III
2000	690,000	690,000	690,000	2.74	2.77	2.82
2001	670,200	670,200	670,200	2.69	2.76	2.84
2002	651,000	651,000	651,000	2.65	2.75	2.88
2003	632,700	632,700	632,700	2.60	2.74	2.90
2004	615,600	615,600	615,600	2.57	2.74	2.95
2005	599,600	599,600	599,600	2.53	2.73	2.98
2006	584,900	584,900	584,900	2.50	2.72	3.01
2007	571,400	571,400	571,400	2.47	2.72	3.07
2008	559,600	559,600	559,600	2.45	2.73	3.13
2009	549,900	549,900	549,900	2.43	2.75	3.18
2010	541,800	541,800	541,800	2.43	2.78	3.26
2011	534,800	534,700	534,700	2.43	2.80	3.34
2012	528,400	528,300	528,200	2.42	2.84	3.43
2013	522,800	522,600	522,400	2.43	2.87	3.53
2014	517,600	517,400	517,100	2.44	2.91	3.62
2015	512,600	512,200	511,800	2.44	2.94	3.71
2016	507,400	506,800	506,100	2.45	2.98	3.81
2017	501,700	500,800	499,900	2.45	3.02	3.91
2018	495,100	494,000	492,800	2.44	3.03	4.01
2019	487,800	486,300	484,700	2.44	3.06	4.07
2020	479,400	477,500	475,500	2.42	3.06	4.13
2021	469,900	467,500	465,000	2.40	3.08	4.19
2022	459,400	456,600	453,400	2.38	3.06	4.20
2023	448,400	444,900	441,100	2.35	3.05	4.20
2024	437,100	432,900	428,400	2.31	3.03	4.24
2025	425,700	420,800	415,400	2.28	3.01	4.20
2026	414,100	408,300	402,100	2.24	2.96	4.19
2027	402,700	396,000	388,700	2.20	2.93	4.14
2028	391,700	383,900	375,700	2.16	2.89	4.13
2029	381,300	372,500	363,100	2.12	2.84	4.08
2030	371,500	361,500	350,800	2.09	2.80	4.03
2031	361,900	350,600	338,500	2.04	2.76	3.94
2032	352,900	340,100	326,600	2.02	2.72	3.89
2033	344,500	330,100	315,100	1.98	2.66	3.80
2034	336,600	320,600	303,900	1.95	2.63	3.75
2035	329,000	311,200	292,700	1.91	2.57	3.66
2036	321,700	302,000	281,400	1.88	2.52	3.56
2037	314,900	293,200	270,700	1.85	2.46	3.47
2038	308,600	284,800	260,300	1.83	2.41	3.38
2039	302,800	276,800	250,300	1.80	2.37	3.25
2040	297,300	269,100	240,300	1.77	2.32	3.16
2045	275,200	235,600	196,500	1.66	2.07	2.66
2050	260,500	211,200	164,100	1.58	1.87	2.25
2055	249,200	192,700	141,100	1.51	1.71	1.93
2060	238,300	177,100	123,900	1.44	1.57	1.70
2065	227,900	164,100	111,200	1.38	1.45	1.52
2070	219,800	154,600	102,700	1.33	1.37	1.41
2073	216,500	150,800	99,400	1.31	1.33	1.36

Table 12. Transfers to railroad retirement system under financial interchange with social security system, 1937-2000^a
(Millions of dollars)

Determination number	Fiscal years covered	Benefit credits to railroad retirement ^b	Tax credits to social security	Cash transfers to ^c railroad retirement	
				Amount	Year of transfer
1-15	1937-66 d	8,191.2	4,531.8	3,701.6 d	1953-67 d
16	1967	806.4	373.0	458.0	1968
17	1968	848.2	364.2	512.8	1969
18	1969	961.3	408.1	589.2	1970
19	1970	1,018.4	436.7	626.2	1971
20	1971	1,155.8	458.5	748.5	1972
21	1972	1,217.1	470.9	802.5	1973
22	1973	1,412.8	556.4	930.9	1974
23	1974	1,575.6	653.5	1,010.3	1975
24	1975	1,853.3	718.7	1,238.7	1976
25	1976	1,872.2 f	772.0	1,207.5	1977
26	1977 e	2,556.6 f	1,060.8	1,618.5	1978
27	1978	2,230.3	902.6	1,477.4	1979
28	1979	2,389.5	1,089.9	1,429.9	1980
29	1980	2,683.4	1,204.8	1,614.3	1981
30	1981	2,973.7	1,322.5	1,819.7	1982
31	1982	3,321.9	1,296.0	2,278.6	1983
32	1983	3,471.8	1,287.9	2,425.6	1984
33	1984	3,524.1	1,472.8	2,352.9	1985
34	1985	3,658.5	1,443.1	2,652.8	1986
35	1986	3,744.8	1,398.7	2,614.2	1987
36	1987	3,864.4	1,305.0	2,851.3	1988
37	1988	4,028.8	1,427.3	2,933.5	1989
38	1989	4,149.5	1,418.9	3,049.2	1990
39	1990	4,415.3	1,451.1	3,456.7	1991
40	1991	4,434.7	1,476.5	3,206.4	1992
41	1992	4,720.1	1,523.1	3,435.3	1993
42	1993	4,796.5	1,583.3	3,525.6	1994
43	1994	5,199.6	1,515.5	4,120.1	1995
44	1995	4,836.2 f	1,545.1	3,556.3	1996
45	1996	5,008.0	1,566.8	3,747.2	1997
46	1997	5,114.1	1,615.4	3,819.0	1998
47	1998	5,173.5	1,641.9	3,816.0	1999
48	1999	5,195.6	1,767.5	3,697.6	2000
Total	1937-99	112,403.3	42,060.4	77,324.7	

^a Financial interchange transactions with the Hospital Insurance Trust Fund are not included. These involve mainly a transfer of collected taxes to the Health Care Financing Administration, with some adjustments for difference in earnings bases under the two systems.

^b Benefit amounts were credited to Railroad Retirement Account for covered years 1983 and earlier and to Social Security Equivalent Benefit Account for covered years 1984 and later. Amounts include allowances for administrative expenses and adjustments to previous determinations.

^c Cash transfers were made to Railroad Retirement Account in 1984 and earlier and to Social Security Equivalent Benefit Account in 1985 and later. Transfers include interest, which is not shown in table.

^d First determination covered period January 1937-June 1952. Initial balance of \$488.2 million was never transferred to social security; only interest was paid until debt was liquidated by subsequent offsets in favor of railroad retirement.

^e 1977 figure covered 15 months (July 1976 - September 1977) because of change in definition of fiscal year.

^f Includes adjustment for pre-1957 military service.

APPENDIX

Outline of the benefit and financing provisions of the railroad retirement system as amended through December 31, 1999

EMPLOYEE BENEFITS

1. Normal age annuity

10-year service requirement for retirement at social security retirement age (see definition at end of outline).

2. Prenormal age annuity

A. Eligible upon later of (1) attainment of age 60 and (2) completion of 30 years of service (60/30 eligibility).

1. If became eligible before 7-1-84, unreduced benefit for retirement at age 60.
2. If became eligible after 6-30-84, unreduced benefit for retirement at age 62.
3. If became eligible after 12-31-85 and employee retires before age 62, tier 1 benefit on annuity beginning date is equal to what social security would have paid an individual retiring at age 62 after applying any age reduction, except that the number of benefit computation years depends on the employee's actual year of birth. Tier 1 benefit is frozen until attainment of age 62, when it is recomputed to equal what social security would have paid the individual had he retired at that time. Tier 2 benefit is not reduced for age. If became eligible between 7-1-84 and 12-31-85, the same procedure applies, except that the age reduction in tier 1 benefit is only one-half the amount applicable after 12-31-85.

B. Other prenormal retirements

For employees retiring at ages 62-64 with at least 10 but less than 30 years of service, the benefit is reduced by 1/180 for each of the first 36 months and by 1/240 for each additional month the employee is under social security retirement age. (Reduction for age in excess of 36 months applies only to tier 1 benefit if employee had any service before 8-12-83.)

3. Total and permanent disability annuity

10-year service requirement. Benefit may not begin earlier than the later of the first day of the sixth month following date disability begins or the first day of the twelfth month before the month in which the application is filed.

4. Occupational disability annuity

Requirement of 20 years of service or attainment of age 60 with 10 years of service; current connection (see definition at end of outline) required. Benefit may not begin earlier than the later of the first day of the sixth month following date disability begins or the first day of the twelfth month before the month in which the application is filed.

5. Supplemental annuity

Requirement of attainment of age 60 with 30 years of service if retired on or after 7-1-74, or age 65 with 25 years of service. Must have service before 10-1-81. Current connection required.

6. Vested dual benefit

- A. Requirement of fully insured (see definition at end of outline) status under Social Security Act effective 12-31-74 and either
 - (i) 25 years of railroad service before 1975 or
 - (ii) 10 years of railroad service before 1975, with some railroad work in 1974 or a current connection on 12-31-74 or at the time the annuity begins, or
 - B. Requirement of fully insured status under Social Security Act as of last year of railroad work before 1975 and 10 years of railroad service before 1975.
-

7. Work restrictions

Suspension of annuity for any month annuitant is employed by a railroad. For disabilities, loss of one month's annuity for each \$400 in excess of \$4,800 earned in a year with the last \$200 of such excess treated as \$400 (no annuity is lost for any month with earnings below \$400). In addition, the tier 1 portion of a regular annuity based on railroad earnings (see definition at end of outline) after 1974 and all social security earnings (see definition at end of outline) is subject to social security work restrictions, unless a social security benefit is also being paid. If annuitant is employed by last non-railroad employer preceding retirement, the tier 2 portion and the supplemental annuity are also affected, being reduced one dollar for each two dollars of earnings, subject to a maximum reduction of 50 percent. All vested dual benefits are subject to social security work restrictions.

8. Creditable service (continuity not required)

All service after December 31, 1936. Service before 1937 may be used if annuitant had employment relation on August 29, 1935 or 6 months of service after August 29, 1935 and before 1946. No limit on service except 30-year maximum if pre-1937 service used. Additional service months may be deemed, for years after 1984, where employee does not work in every month of year, but railroad earnings exceed monthly prorations of annual maximum earnings creditable.

9. Creditable and taxable railroad earnings

From 1966 through 1978, the maximum monthly earnings were one-twelfth of the annual social security maximum. The 1977 social security amendments introduced a difference between the maximum monthly earnings creditable for tier 1 and tier 2 benefits starting in 1979.

before July 1, 1954	\$ 300		<u>Tier 1</u>	<u>Tier 2</u>
July 1, 1954 - May 31, 1959	350	1979	\$1,908.33	\$1,575
June 1, 1959 - Oct. 31, 1963	400	1980	2,158.33	1,700
Nov. 1, 1963 - Dec. 31, 1965	450	1981	2,475	1,850
1966-67	550	1982	2,700	2,025
1968-71	650	1983	2,975	2,225
1972	750	1984	3,150	2,350
1973	900			
1974	1,100			
1975	1,175			
1976	1,275			
1977	1,375			
1978	1,475			

Starting in 1985, earnings are credited on an annual rather than a monthly basis. The annual maximums are:

	<u>Tier 1</u>	<u>Tier 2</u>		<u>Tier 1</u>	<u>Tier 2</u>
1985	\$39,600	\$29,700	1993	\$57,600	\$42,900
1986	42,000	31,500	1994	60,600	45,000
1987	43,800	32,700	1995	61,200	45,300
1988	45,000	33,600	1996	62,700	46,500
1989	48,000	35,700	1997	65,400	48,600
1990	51,300	38,100	1998	68,400	50,700
1991	53,400	39,600	1999	72,600	53,700
1992	55,500	41,400	2000	76,200	56,700

10. Creditable military service and earnings

Military service is creditable in war and national emergency periods, and in some cases between June 15, 1948 and December 15, 1950, if preceded by railroad service in the year of entry into military service or the preceding year.

Earnings: \$160 before 1968

\$260 after 1967 but before 1975

For each calendar year after 1974, earnings are the same as that credited under social security.

11. Basic monthly annuity computation

Tier 1: Social security benefit based on combined railroad and social security earnings, less social security benefit actually payable (based on social security earnings only). See item 2 for computation of tier 1 benefit for employees with 60/30 eligibility.

Tier 2: 0.7% of the average monthly compensation (AMC) multiplied by the number of years of service. This amount is then reduced by 25% of the employee's gross vested dual benefit. The AMC is the average of an individual's highest 60 months of railroad earnings up to the tier 2 maximum. For each month of service in a year for which the Railroad Retirement Board's records do not show earnings on a monthly basis, the total earnings for the year divided by the months of service in that year will be considered the monthly earnings for each month of service in the year.

12. Vested dual benefit computation

- A. For employees satisfying requirements in item 6.A., benefit is social security benefit based on railroad earnings through 1974, plus social security benefit based on social security earnings through 1974, less social security benefit based on combined railroad and social security earnings through 1974.
- B. For employees satisfying requirements of item 6.B., benefit is the same as in A., except for the exclusion of all earnings after last pre-1975 year employee had railroad employment.

In both cases, benefit might be proportionally reduced so that the total amount paid out in vested dual benefits in any fiscal year does not exceed the total amount appropriated for that year (see item 42).

13. Supplemental annuity computation

For employees who were entitled to supplemental annuities or who would have been entitled, but for last person service, prior to 1975, the monthly benefit is a minimum of \$45 increased by \$5 for each year of service over 25, with a maximum benefit of \$70. These employees have a reduction in their regular railroad retirement annuity because of the supplemental annuity. For employees first entitled or potentially entitled after 1974, the monthly benefit is a minimum of \$23 increased by \$4 for each year of service over 25, with a maximum benefit of \$43. These employees have no reduction in their regular railroad retirement annuity. Supplemental annuity will be reduced if employee receives a private pension from railroad employer based on employer contributions.

14. Cost-of-living increases (annually, effective with January 1 payments)

Tier 1: Same as social security increases.

Tier 2: 32.5% of social security increases.

Vested dual benefits: Frozen at the 1974 level, except that social security cost-of-living increases effective between 12-31-74 and the earlier of January 1, 1982 and the annuity beginning date are included in the benefit computation.

Supplemental annuity: None.

15. Tax rebate lump sum

Employee who has at least 10 years of railroad service and is not eligible for the vested dual benefit will receive a lump sum at retirement computed by summing for each year from 1951 through 1974 the product of the social security tax rate for the year times the excess of the employee's combined railroad and social security earnings for the year over (approximately) the maximum creditable for the year under the 1937 Act. Survivors of employee may receive refund if employee dies before receiving it.

16. Separation/severance lump sum

Lump sum, equal to tier 2 payroll taxes deducted from separation or severance payments, will be paid at retirement to employees with 10 or more years of service to the extent that separation or severance payments did not yield additional tier 2 service credits.

SPOUSE BENEFITS

17. Eligibility

A. Unreduced annuity:

1. Spouse retiring at age 60 (or any age with a child in care), if employee attained 60/30 eligibility before 7-1-84 and retired at age 60 or later, or if employee attained 60/30 eligibility after 6-30-84 and retired at age 62 or later.
2. Spouse retiring at social security normal retirement age (or any age with a child in care), if (a) employee retired before 1-1-75 and is age 65 or over, (b) employee retired after 12-31-74 and is age 62 or over, or (c) employee retired after 6-30-74, has 30 or more years of service and is age 60 or over.

B. Reduced annuity:

1. Spouse retiring at age 60 if employee attained 60/30 eligibility after 6-30-84 and retired after 6-30-84 before attaining age 62. If employee and spouse have not both attained age 62, spouse tier 1 is one-half the tier 1 the employee received before attaining age 62. If employee and spouse have both attained age 62, spouse tier 1 is equal to a social security spouse benefit after applying an age reduction based on the spouse's age at the time both employee and spouse became age 62; in this case, if employee attained 60/30 eligibility between 7-1-84 and 12-31-85, spouse age reduction is one-half the amount otherwise applicable.
 2. Spouse retiring at age 60, if employee attained 60/30 eligibility after 6-30-84 and retired from disability after 6-30-84. Age reduction in tier 1 is 1/144 for each of first 36 months and 1/240 for each additional month spouse is under social security retirement age; spouses retiring at 60-61 are deemed 62.
 3. Spouse retiring at age 62, if employee has less than 30 years of service, is retired, and has attained age 62. Age reduction is 1/144 for each of the first 36 months spouse is under social security retirement age and 1/240 for each month in excess of 36 that spouse is under retirement age. (Reduction for age in excess of 36 months applies to tier 1, but not tier 2, if employee had any service before 8-12-83.)
-

18. Work restrictions

Same as employee; in addition, spouse is not paid for any month employee annuity is not payable by virtue of work restrictions, and spouse is reduced \$1 for each \$2 of employee's earnings for last non-railroad employer preceding employee's retirement (see item 7).

19. Annuity computation

Tier 1: One-half of social security benefit based on employee's combined railroad and social security earnings. See item 17 for computation of spouse tier 1 in cases where employee is receiving a reduced 60/30 benefit. If spouse is entitled to a social security benefit, tier 1 is reduced by the amount of the benefit, but not below 0. If spouse is entitled to employee annuity or a public service pension, certain additional restrictions apply.

Tier 2: 45% of employee's tier 2 benefit. Spouse receives additional benefit if spouse is also an employee annuitant and either the employee or spouse has railroad service prior to 1975.

20. Vested dual benefit

A spouse receiving a vested dual benefit on August 13, 1981 will continue to receive a benefit (adjusted as described in item 12). No vested dual benefits will be awarded after that date.

21. Divorced spouse

Entitled to a tier 1 benefit only. Employee must be age 62 and retired. Divorced spouse must be social security normal retirement age (or age 62 for reduced benefit), unmarried, and have been married for at least 10 years to employee.

22. Cost-of-living increases

Each tier is subject to same percentage increase as corresponding tier of employee benefit.

MAXIMUM AND MINIMUM ANNUITIES

23. Maximum annuity (employee and spouse)

100% of "final AMC" up to an amount equal to 50% of 1/12 of the annual tier 1 earnings limit in the year in which the annuity begins, plus 80% of that part of the final AMC that exceeds 50% of 1/12 of the annual tier 1 earnings limit. The final AMC is the average monthly combined railroad and social security earnings received by the employee during the two highest calendar years of earnings in the 10 years ending with retirement. Earnings used in computing the final AMC are subject to the tier 2 earnings maximum.

If the combined employee and spouse annuities (before reduction for age and social security benefits, and excluding the vested dual benefit) exceed the above amount, the spouse's tier 2 benefit is reduced first, then the employee's supplemental annuity, and finally the employee's tier 2 benefit. The tier 1 benefits are not reduced. The maximum may not reduce total family benefits (excluding the vested dual benefit, and before reduction for age and social security benefit) below \$1,200 per month.

24. Minimum annuity

The overall minimum guaranty for employees and dependents is 100% of the amount, or the additional amount, the family would receive under the Social Security Act if the employee's railroad earnings after 1936 were credited as social security earnings.

SURVIVOR AND DEATH BENEFITS

25. Residual lump sum death benefit

Payable when it appears no further benefits will derive from deceased employee except possibly to a widow, widower or parent at a future date. In this case, survivor must waive the right to all future benefits based on the deceased employee's railroad service. The amount payable is the sum of 4% of taxable railroad earnings from 1-1-37 to 12-31-46, 7% from 1-1-47 to 12-31-58, 7-1/2% from 1-1-59 to 12-31-61, 8% from 1-1-62 to 12-31-65, and from 1-1-66 to 12-31-74, 1/2% above the employee contribution rate exclusive of medicare. Railroad earnings after 1974 are not taken into account. The amount actually paid is reduced by the amount of benefits paid deriving from the deceased employee.

26. Employee requirement for survivor benefits

All benefits except residual lump sum require deceased employee to have 10 years of railroad service and a current connection. If employee does not meet above conditions, his earnings record is transferred to social security, which pays any survivor benefits.

27. Aged widow's and widower's eligibility

A widow or widower must be age 60 and unremarried. Those age 60-61 are deemed age 62 in computing the benefit. For those born before 1940, the benefit reduction is 19/40% for each month of age under 65 when benefits begin. For those born after 1939, the age reduction depends on the age at retirement and the social security retirement age. In this case, the monthly reduction factor is that percentage which would cause retirement at age 60 to result in a 28.5 percent reduction.

28. Disabled widow's and widower's eligibility

A widow or widower must be at least age 50 and under age 60, unremarried, and totally and permanently disabled if disability occurs within 7 years of employee's death or within 7 years after widowed mother's or father's status terminated. Age reduction is 28.5%. Benefit may not begin earlier than the first day of the sixth month following the date disability begins or the first day of the twelfth month before the month in which the application is filed.

29. Widowed mother's and father's eligibility

Unremarried surviving spouse of a deceased employee who is under social security normal retirement age and who at the time of filing an application has in his or her care a minor or disabled child of the deceased employee.

30. Divorced widow(er)'s and remarried widow(er)'s eligibility

The following are eligible for a tier 1 benefit only.

- A. Divorced widow(er) - must (i) have been married to employee at least 10 years, be unmarried or remarried after age 60 (after age 50 and disability onset if disabled), and have attained age 60 or age 50 if disabled, or (ii) be unmarried and any age and have a child of the employee in care.
- B. Remarried widow(er) - must have remarried after age 60 (after age 50 and disability onset if disabled), or the remarriage must have ended. Widow(er) must have attained age 60, be between 50 and 59 and disabled or be any age with a child in care.

Benefits for divorced aged widow(er)s and remarried aged widow(er)s are reduced for the full number of months under social security normal retirement age.

31. Child's eligibility

A child of a deceased employee must be under 18 or under 19 and a full-time elementary or secondary school student. Unmarried children continuously disabled since before age 22 are also eligible, regardless of age.

32. Parent's eligibility

A parent of a deceased employee who has attained age 60 and received at least one-half of his or her support from the employee will be eligible for an annuity. If the employee died leaving a widow, widower or child who is or might become eligible in the future, the parent will be eligible for a tier 1 benefit only. In certain instances, a remarried parent of a deceased employee will be eligible for a tier 1 benefit.

33. Work restrictions

Annuity not payable for any month in which survivor engages in railroad employment. Entire benefit subject to social security work restrictions.

34. Annuity computation

Tier 1: Amount payable to survivor under Social Security Act, based on the deceased employee's combined railroad and social security earnings after 12-31-36, less the amount of any social security benefit received. Additional restrictions exist for a widow or widower who also receives an annuity as a railroad employee or who receives a public service pension.

Tier 2: Widow or widower - 50% of employee tier 2 benefit
 Parent - 35% of employee tier 2 benefit
 Children - 15% of employee tier 2 benefit for each child
 The total family tier 2 benefit has a minimum of 35% and a maximum of 80% of the employee's tier 2 benefit.

For aged widow or widower, the total benefit exclusive of any vested dual benefit may not be less than amount received as spouse in month before employee's death.

All percentages are before deductions for work or entitlement to social security benefit or railroad retirement employee annuity.

35. Vested dual benefit for widow or widower

A widow or widower receiving a vested dual benefit on August 13, 1981 will continue to receive a benefit (adjusted as described in item 12). No vested dual benefits will be awarded after that date.

36. Insurance lump sum

Payable if employee leaves no survivor eligible for monthly benefits in the month of his death.

- A. If employee had 10 years of service before 1-1-75, the benefit is 10 times the basic amount. The basic amount is 52.4% of the first \$75 of average monthly remuneration (AMR), plus 12.8% of the remainder, increased by 1% for each year before 1975 with earnings of \$200 or more. The AMR is combined railroad and social security earnings before 1975 divided by the number of months after 1936 or age 22 and up to retirement or death.
- B. If employee had less than 10 years of service as of 12-31-74, the amount will be the amount social security would have paid (currently \$255). This amount will only be paid to a widow or widower living with the employee at the time of the employee's death.

37. Cost-of-living increases for survivors

Each tier is subject to same percentage increase as corresponding tier of employee benefit.

FINANCING, INVESTMENTS AND TAXATION OF BENEFITS

38. Employee and employer payroll taxes

Employees and employers contribute at the prevailing social security rate of pay up to the tier 1 earnings limit. In addition, employers contribute 16.1 percent and employees contribute 4.9 percent of pay up to the tier 2 earnings limit. Contributions to 401(k) deferred compensation plans and the value of employer-paid premiums for group term life insurance coverage in excess of \$50,000 are included in railroad earnings for payroll tax purposes.

39. Supplemental annuity tax

Taxes for the supplemental account are collected on the basis of the \$45-\$70 benefit scale previously in effect. The tax rate is determined quarterly by the Railroad Retirement Board on a cents-per-work-hour basis and is paid by employers. The excess resulting from the \$23-\$43 actual benefit scale is transferred to the regular railroad retirement account.

40. Financial interchange

Railroad retirement system pays to social security system the taxes social security would have collected and receives the additional amount of benefits and administrative expenses social security would have paid if railroad employment had been covered under social security. The net difference (including interest) is transferred in the June after the fiscal year for which the transfer is made.

The Railroad Retirement Board estimates the amount and direction of the financial interchange transfer that would be made for each month if transfers were on a current monthly basis. If this estimate favors the railroad retirement system, Treasury advances the amount with interest to the railroad retirement account, as a loan from the general fund, by the middle of the succeeding month. Within 10 days after receipt of the annual financial interchange for a fiscal year, the RRB must repay the amount, with interest, advanced during the fiscal year.

41. Investments

Railroad retirement system funds are permitted to be invested in special obligations, U.S. interest-bearing securities, and interest-bearing securities guaranteed by the U.S. or which are lawful investments for trust funds managed by the Treasury. The securities purchased in a month must have fixed maturity dates and interest yields at rates at least as high as the average market yield of all Treasury notes with maturities of over 3 years, but not less than 3%. The Railroad Retirement Board has the authority to make mandatory requests upon the Secretary of the Treasury as to purchase of these obligations. The Railroad Retirement Board determines when and which securities are to be redeemed for the purpose of paying benefits or for reinvestment.

42. Financing of vested dual benefits

General revenue appropriations finance all vested dual benefit payments since September 1981. Beginning October 1, 1981, each annual appropriation is placed in the Dual Benefits Payments Account. Total benefits paid in any fiscal year (starting with 1982) may not exceed the total available in the account. The account may borrow at the end of a fiscal year the amount that the Railroad Retirement Board estimates will be necessary to pay vested dual benefits for the first month of the next fiscal year.

43. Taxability of benefits

The portion of tier 1 benefits equivalent to social security benefits is taxed under the same rules as are social security benefits. Tier 1 benefits in excess of social security equivalent benefits, tier 2 benefits, vested dual benefits, and supplemental annuities are taxed under the rules by which private pensions are taxed.

Revenues from taxes on social security equivalent benefits are transferred to the social security system through the financial interchange. Revenues from taxes on tier 1 benefits in excess of social security equivalent benefits and tier 2 benefits are transferred to the Railroad Retirement Account. Revenue derived from taxing vested dual benefits is transferred to the Dual Benefits Payments Account.

MISCELLANEOUS PROVISIONS

44. Benefit preservation

Each year the Railroad Retirement Board must report to the President and Congress the results of a five-year projection of anticipated revenues to and payments from the railroad retirement account. If the results show that the funds in the account will be insufficient to pay full benefits at any time during the five-year period, the report must indicate (1) the first fiscal year in which benefits would have to be reduced because of insufficient funds in the absence of any changes, and (2) the amount of adjustments necessary to preserve financial solvency. Within 180 days after publication of this report, representatives of railroad labor and management are obligated to submit proposals designed to preserve the fund's solvency. The Railroad Retirement Board will publish regulations necessary to provide a constant level of benefits at the maximum level possible and to insure that no individual receives less than what he would have had all his earnings been covered under social security. The Railroad Retirement Board's regulations will take effect beginning with the first year in which benefit reductions will be necessary and continue until legislative action supersedes them.

45. Automatic benefit eligibility adjustments

Liberalizations in social security eligibility requirements will automatically be reflected in railroad retirement eligibility requirements, but reductions in social security requirements for categories not entitled to railroad retirement annuities under the 1937 act will not confer railroad retirement eligibility. If the Social Security Act is amended to provide benefits to a class not previously entitled under social security, the new class will also be provided railroad retirement benefits. The amount will be the social security benefit based on the employee's combined railroad and social security earnings.

46. Transfer of credits

Transfer of railroad retirement credits is made to social security if an employee had less than 10 years of railroad service or, in the case of a survivor, if the employee lacked a current connection.

DEFINITIONS

The meanings of terms used in the outline are defined below:

Railroad earnings - earnings derived from covered railroad employment, up to the maximums specified in item 9.

Social security earnings - earnings derived from employment covered under the Social Security Act (excludes railroad earnings), up to the maximums allowed.

Current connection - generally defined as having at least 12 months of railroad service in the 30 months preceding death or retirement. An employee whose last 12 months of railroad service occurred prior to the 30 months before retirement or death may maintain a current connection if the employee did not perform any regular employment between the end of the 30 month period containing the last 12 months of railroad service and the month of retirement or death. For purposes of the supplemental annuity or survivors' benefits, an employee who was terminated involuntarily and without fault on or after October 1, 1975, after 25 years of service and did not thereafter decline an offer of employment in the same class or craft in the railroad industry is deemed to have a current connection.

Fully insured - insured for retirement at age 62 under social security; does not necessarily imply an insured status for disability benefits or for survivor benefits for death before age 62.

Social security benefit - when used in describing the computation of the vested dual benefit, the term "social security benefit" means a primary insurance amount computed by using the social security formula in effect in 1974 and the specified earnings; it does not imply an actual benefit.

Social security retirement age - the age at which an individual may receive an unreduced benefit at retirement under the Social Security Act, as follows:

Year of attainment of early retirement age (62 for employees and spouses, 60 for widows and widowers)	Retirement age (age for unreduced benefit)
1999 or earlier	65 years, 0 months
2000	65 years, 2 months
2001	65 years, 4 months
2002	65 years, 6 months
2003	65 years, 8 months
2004	65 years, 10 months
2005-2016	66 years, 0 months
2017	66 years, 2 months
2018	66 years, 4 months
2019	66 years, 6 months
2020	66 years, 8 months
2021	66 years, 10 months
2022 or later	67 years, 0 months